# KV-1352E

SERVICE MANUAL

AEP Model

Chassis No. SCC-445A-A



P2E chassis

September, 1982

#### **SPECIFICATIONS**

Television system CCIR TV standards (system B, G and H)

Color system PAL

Picture tube

Channel coverage VHF channels E2-4 (Band I)

E5-12 (Band III)

UHF channels E21-68 (Band IV/V)

33 cm (13"), 90-degree deflection Trinitron

system (31 cm screen measured diagonally)

Antenna 75-ohm standard antenna socket

Speaker 10 cm (4 inches) dia.

Audio output 2 W (with 10% harmonic distortion)

Power requirements 220-240 V ac, 50 Hz

Power consumption 58 V

Dimensions Approx.  $338 \times 359 \times 378 \text{ mm (w/h/d)}$ 

Weight Approx. 11.5 kg

Accessories supplied Remote Commander RM-620

Earphone

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON®
COLOR TV RECEIVER
SONY®



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#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK 

① ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

## SECTION 1 GENERAL

#### **PRECAUTIONS**

#### USE

- Operate the unit only on 220-240 V ac, 50 Hz.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not attempt to make any of the adjustments at the small holes in the rear of the unit. These are special ajustments to be performed only by qualified personnel.
- Unplug the unit from the wall outlet if it is not to be used for several days.
- To disconnect the ac power cord, pull it out by the plug. Never pull the cord itself.

#### INSTALLATION

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

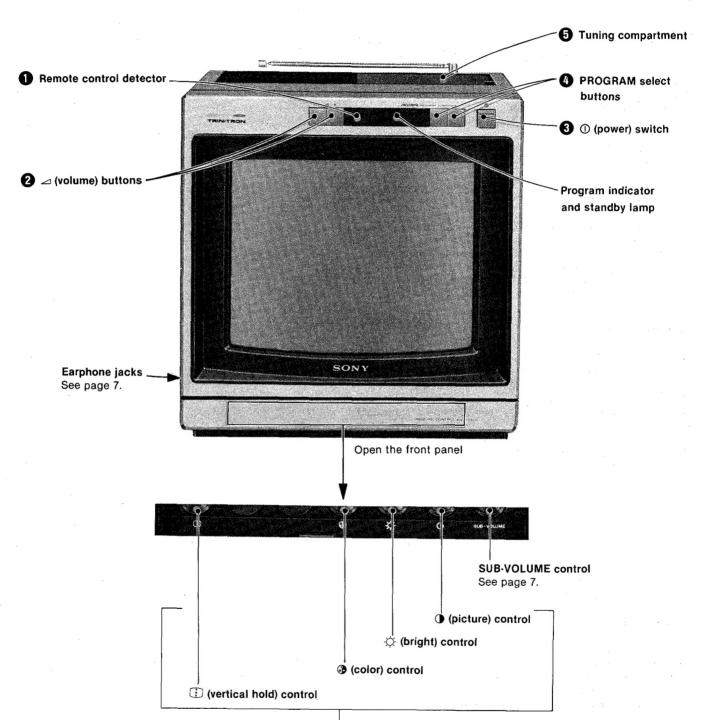
#### **MAINTENANCE**

- Save the original shipping carton and packing material; they will come in handy if you ever have to ship your unit. For maximum protection, repack your unit as it was originally packed at the factory.
- To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

#### **FEATURES**

- Remote-control color television
- Built-in automatic fine tuning
- Reception of all VHF and UHF channels based on CCIR TV standards and PAL color system
- Energy-saving quick-start picture system

#### 1-1. LOCATION OF PARTS AND CONTROLS



Use these controls to adjust the picture. See page 7.

#### Remote control detector

Point the infrared transmitter of the supplied Remote Commander here.

#### ② ∠ (volume) buttons

Adjust the volume from the level preset by the SUB-VOLUME control. Press the + button to increase the volume and press the - button to decrease.

#### 1 (power) switch

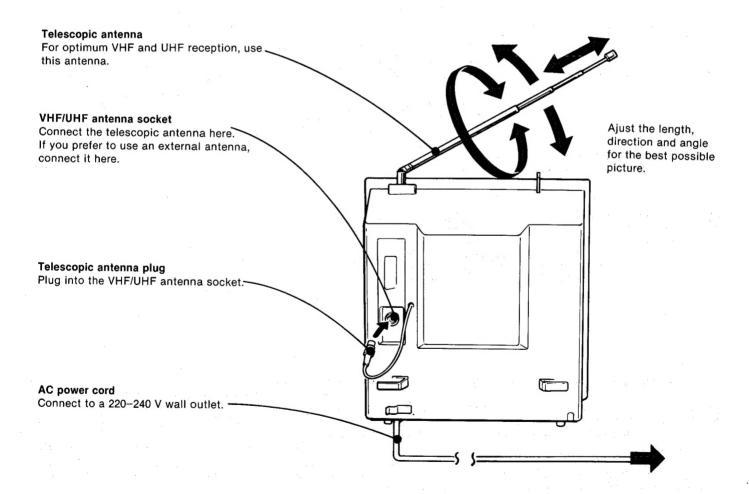
Press to turn the TV on. Press again to turn it off. When the TV is operated with the supplied Remote Commander, this switch must be depressed.

#### PROGRAM select buttons

Press + to select a program with a higher number and – to select a program with a lower number. This TV has 12 program positions, to each of which a particular channel can be preset.

#### **6** Tuning compartment

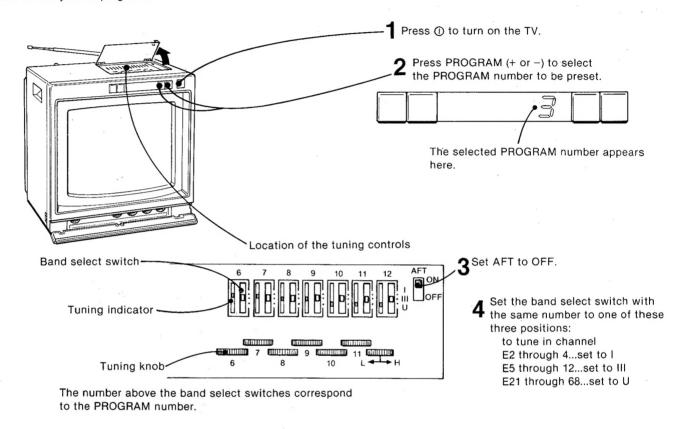
All the switches and controls for channel presetting are in this compartment. For their operation, see page 6.



This TV is supplied with an RM-620 Remote Commander. See "REMOTE CONTROL OPERATION" on page 8.

#### 1-2. PROGRAM PRESETTING

Once you preset the programs broadcast in your area, program selection is simply made by pressing the PROGRAM select buttons on the TV or by using hand-held Remote Commander. You can preset as many as 12 programs.



Turn the tuning knob with the same number until the desired channel is properly tuned in.

for lowernumbered channel



The tuning indicator provides a visual indication of the approximate location of the tuning knob within the operating range of the band select switch.

Repeat steps 2 through 5 for all the channels you wish to preset.

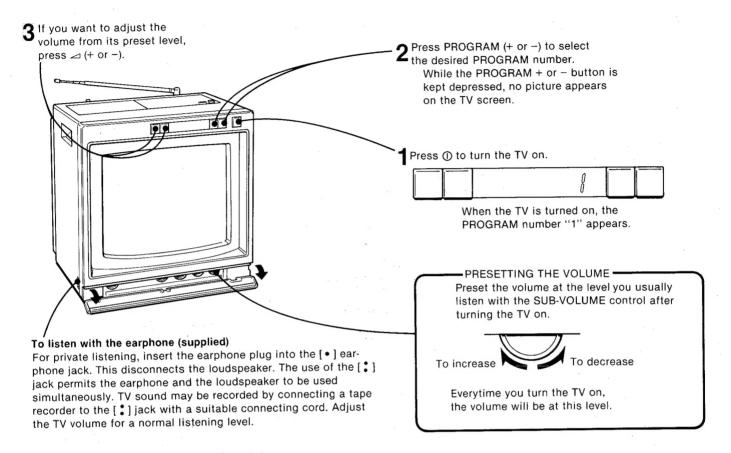
Set AFT to ON when all the channels have been preset, then close the compartment lid.

sharp picture.

- In case of extreme interference or of an extremely weak statio more pleasing results may be maintained with the AFT switch s to OFF.
- · After presetting has been completed, select the PROGRA The AFT then locks in the received signal and maintains a number in numerical sequence with the PROGRAM select buttor to check the results of presetting, referring to your local TV listing

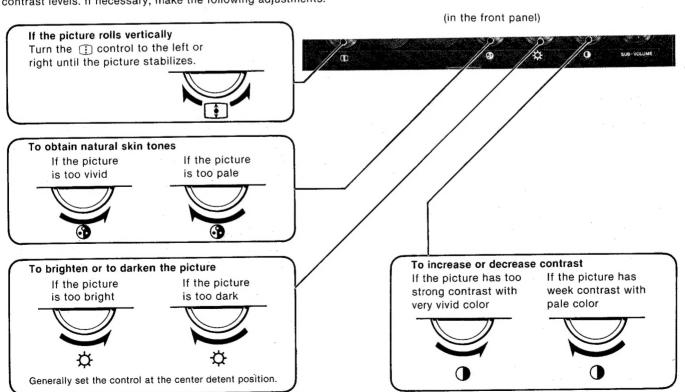
If a Sony OPK-102 SECAM adaptor (optional) is built into the TV, SECAM color programs can be seen. Operate the TV as usual. For details, refer to the instruction manual of the OPK-102.

#### 1-3. HOW TO OPERATE THE TV



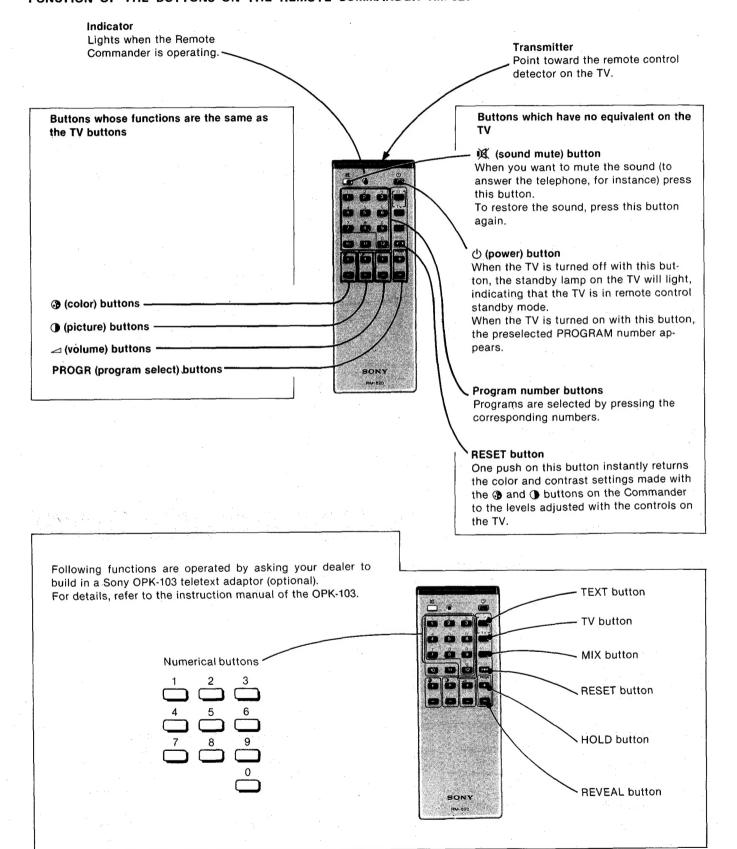
#### 1-4. PICTURE ADJUSTMENTS

This TV always turns on with the factory-preset constant color and contrast levels. If necessary, make the following adjustments:

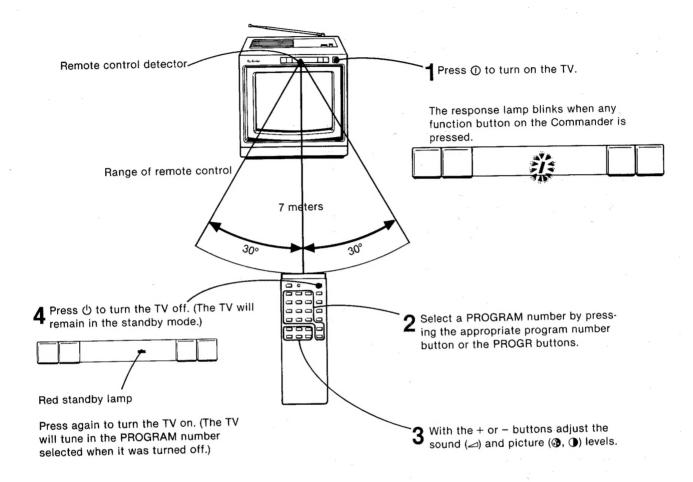


#### 1-5. REMOTE CONTROL OPERATION

#### FUNCTION OF THE BUTTONS ON THE REMOTE COMMANDER RM-620



#### OPERATION WITH THE REMOTE COMMANDER

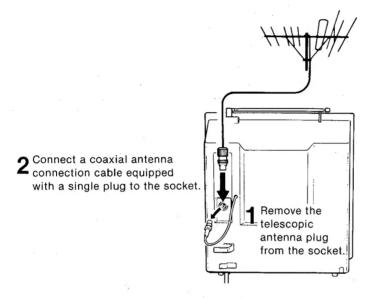


#### Notes on the Remote Commander

- In normal use, battery life is up to half a year. When the batteries are exhausted, the Commander will not operate the TV properly. In this case, replace the batteries with new ones.
- When the Commander is not to be used for a long period of time, remove the batteries to avoid damage from possible battery leakage.
- Keep the Commander away from extremely hot or humid places.
- Avoid dropping any foreign objects into the Commander case, particularly when replacing batteries.
- The supplied RM-620 Commander may be used only with those Sony color TV models indicated in the operating instructions.
- If the TV is turned off with the Remote Commander (so the standby lamp lights up), the program, volume and picture settings will remain the same when the TV is turned on again.
- If the power supply is interrupted or the ac power cord is disconnected during operation, the TV will enter into the standby mode when the power is restored.

#### 1-6. EXTERNAL ANTENNA CONNECTION

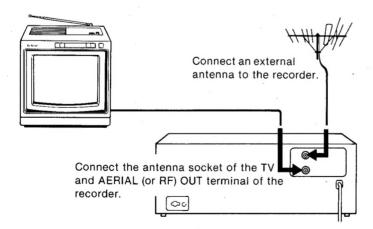
The built-in telescopic antenna will provide good reception in most reception areas. If you cannot obtain satisfactory reception with it, the use of an outdoor antenna is recommended.



Your Sony dealer will be pleased to advise you which type of antenna is best suited to your location.

#### 1-7. VTR CONNECTION

When a video cassette recorder is connected to the TV, you can view the playback of a recorded tape or a TV program.

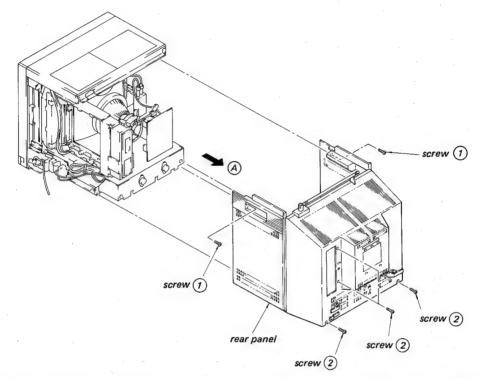


For details, refer to the operating instructions furnished with the recorder.

## SECTION 2 DISASSEMBLY

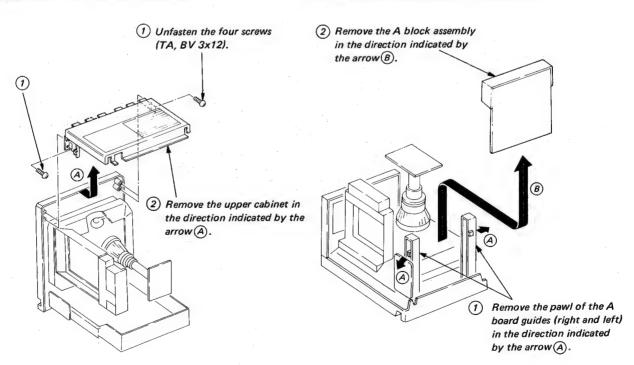
#### 2-1. REAR PANEL REMOVING

- 1. Remove the two screws 1.
- 2. Remove the four screws 2.
- 3. Remove the rear panel in the direction indicated by the arrow (A).

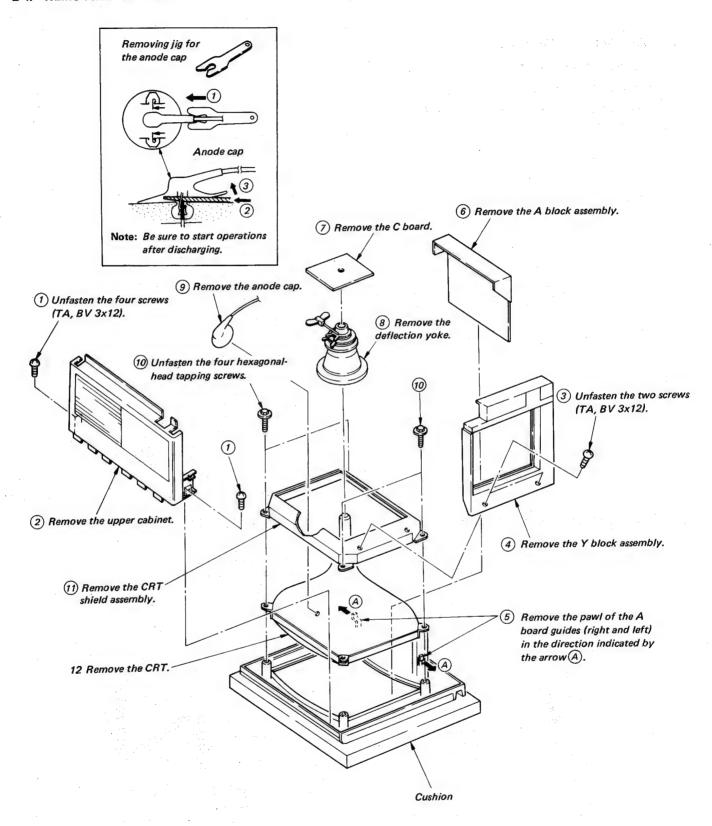


#### 2-2. REMOVING THE UPPER CABINET

#### 2-3. A BLOCK ASSEMBLY REMOVAL



#### 2-4. REMOVING THE CRT

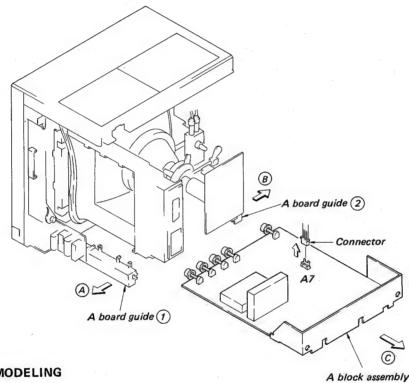


#### 2-5. OPK-102 ATTACHING

#### 1. REAR PANEL REMOVAL (See 2-1 on page 11.)

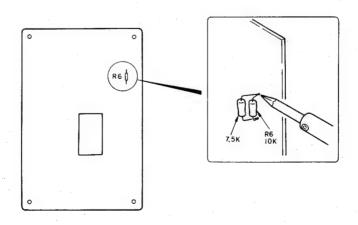
#### 2. A BLOCK ASSEMBLY DISASSEMBLING

- Remove the hooks of the A board guides 1 and 2 and pull the guides in the direction indicated by the arrows (A) and (B).
- 2. Pull out the A block assembly in the direction indicated by the arrow ©.
- 3. Pull up the A7-side connector on the A board in the direction indicated by the arrow.



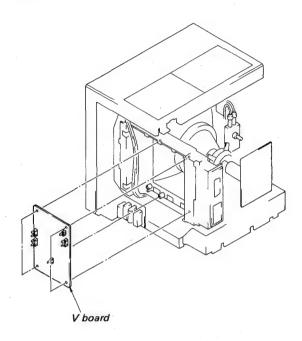
#### S. SCM BOARD REMODELING

• Connect 7.5 k $\Omega$  in parallel to the R6/10 k $\Omega$  as shown in the figure.



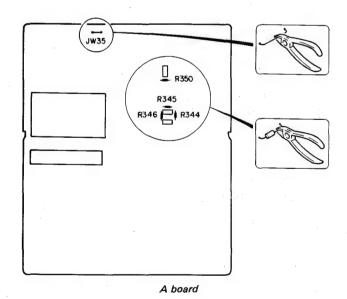
#### 4. SCM BOARD (OPK-102) MOUNTING

1. Fix the remodeled SCM board as shown in the figure.



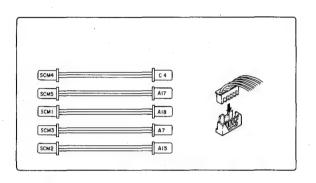
#### 5. A BOARD REMODELING

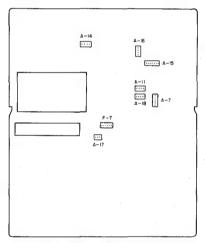
- 1. Cut off R344, R345 and R346/3.3 k $\Omega$  using a nipper as shown in the figure.
- 2. Cut off R350/100  $\Omega$  using a nipper as shown in the figure.
- 3. Cut off the jumper wire (JW-35) using a nipper as shown in the figure.



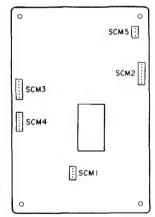
#### 6. CONNECTOR CONNECTION

 Connect the other end of the harness connected to the SCM board to each connector on the A and C boards, respectively, as shown in the figure below. (Refer to the connector arrangement on the A and SCM boards.)





Connector arrangement on A board



Connector arrangement on SCM board

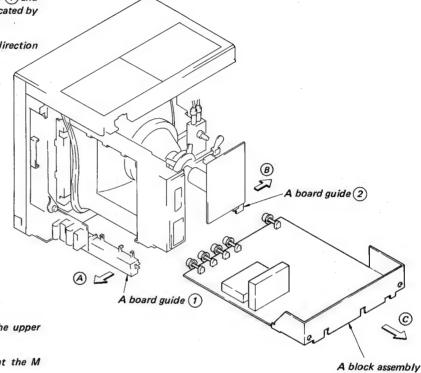
#### 2-6. OPK-103 ATTACHING

#### 1. REAR PANEL REMOVING (See 2-1 on page 11.)

#### 2. A BLOCK ASSEMBLY DISASSEMBLING

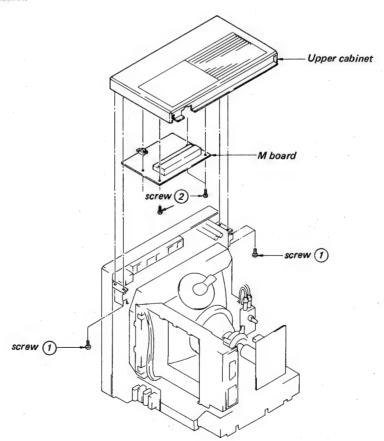
Remove the hooks of the A board guides 1 and 2 and pull the guides in the direction indicated by the arrows A and B.

2. Pull out the A block assembly in the direction indicated by the arrow ©.



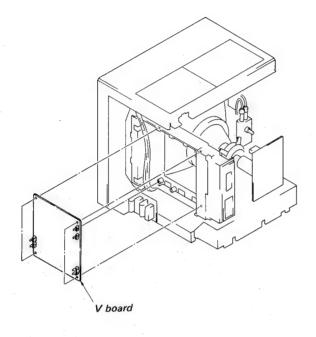
#### 3. M BOARD DISMOUNTING

- Remove the four screws 1 to detach the upper cabinet.
- 2. Remove the four screws 2 to dismount the M board from the upper cabinet.



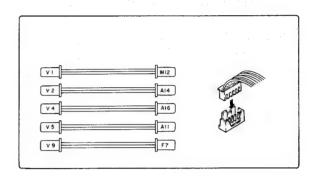
#### 4. V BOARD (OPK-103) MOUNTING

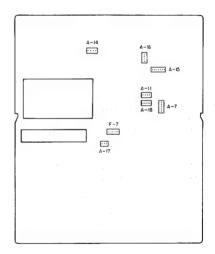
1. Fix the V board as shown in the figure.



#### 6. CONNECTOR CONNECTION

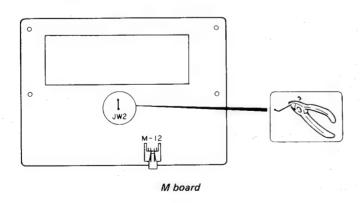
 Connect the other end of the harness connected to the V board to each connector on the A board as shown in the figure below. (Refer to the connector arrangement on the A and V boards.)



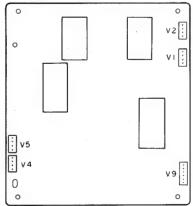


#### 5. M BOARD REMODELING

 Cut off the jumper wire (JW-2) using a nipper as shown in figure.



Connector arrangement on A board

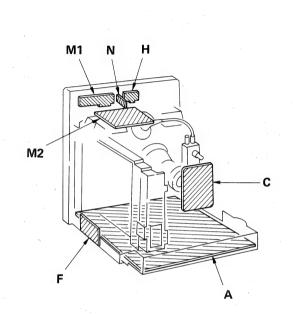


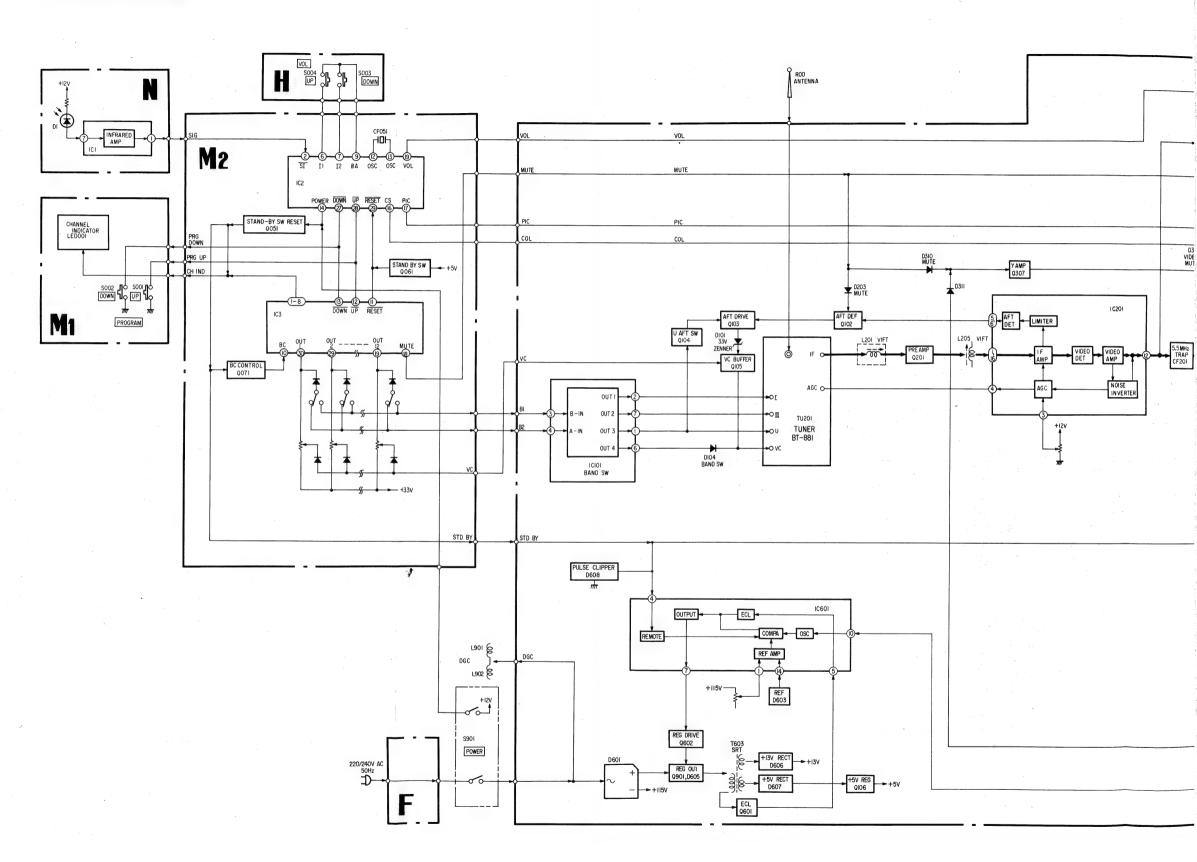
Connector arrangement on V board

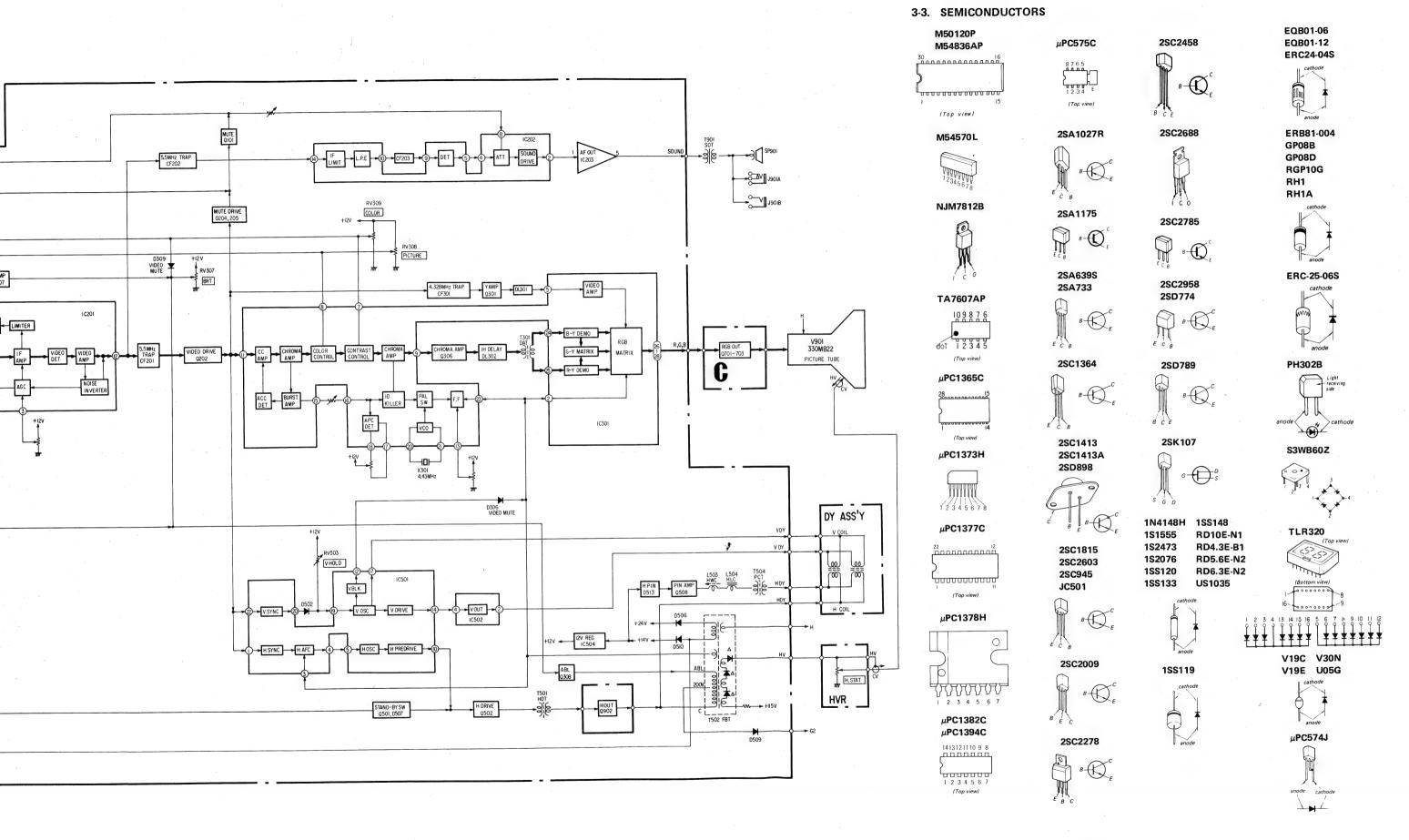
# SECTION 3 DIAGRAMS

#### 3-1. CIRCUIT BOARDS LOCATION

3-2. BLOCK DIAGRAM





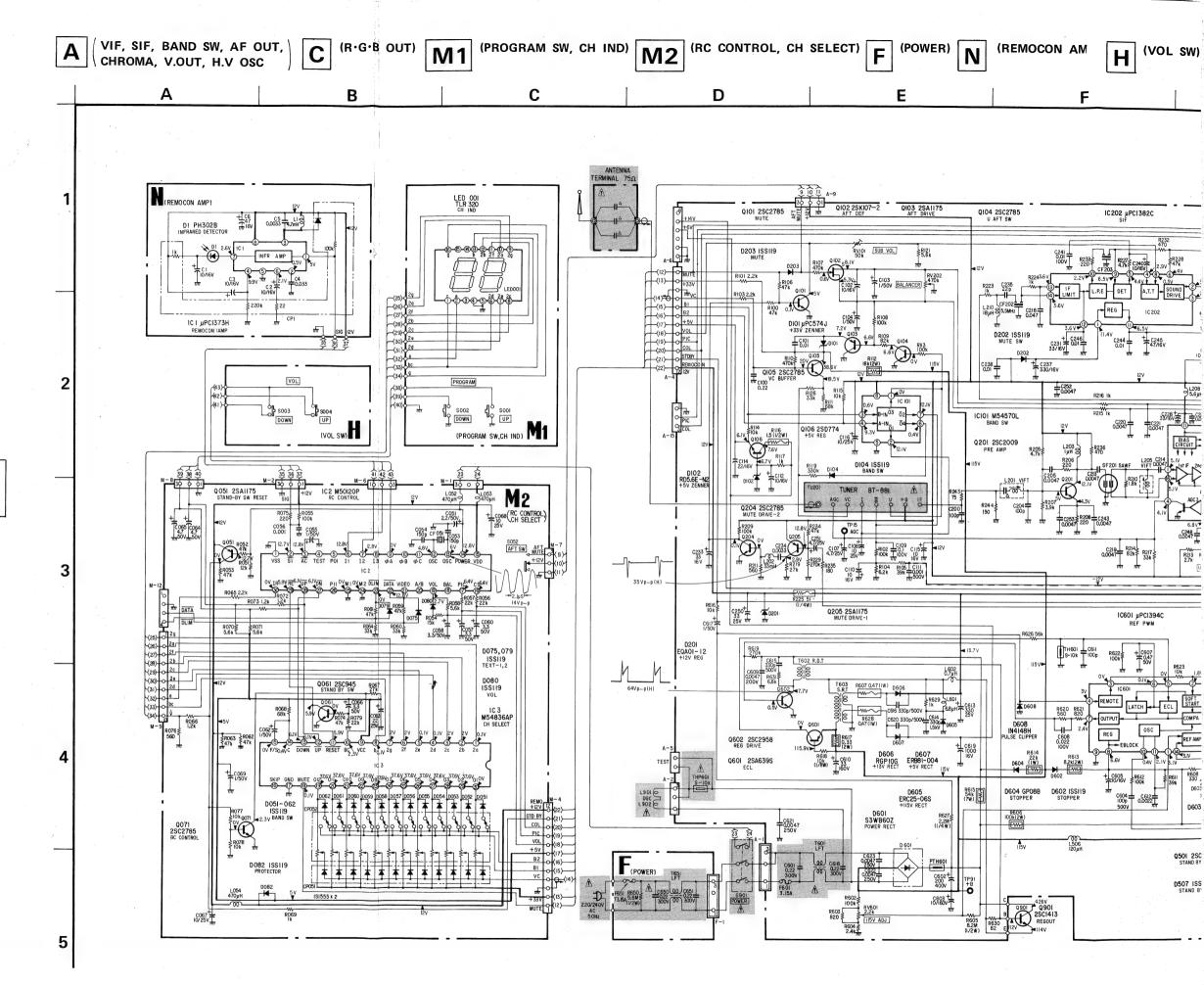


#### 3-4. SCHEMATIC DIAGRAM

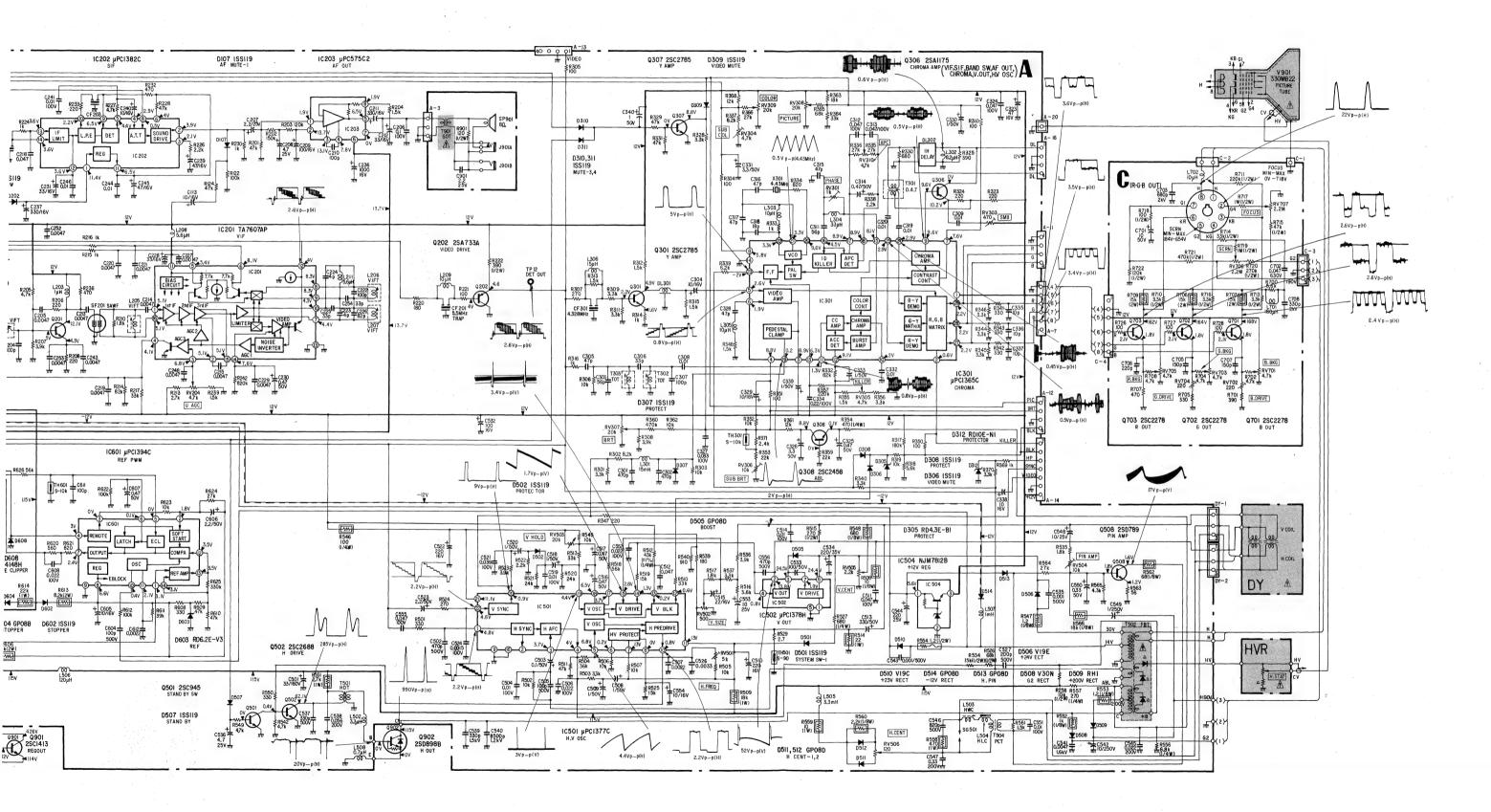
#### Note:

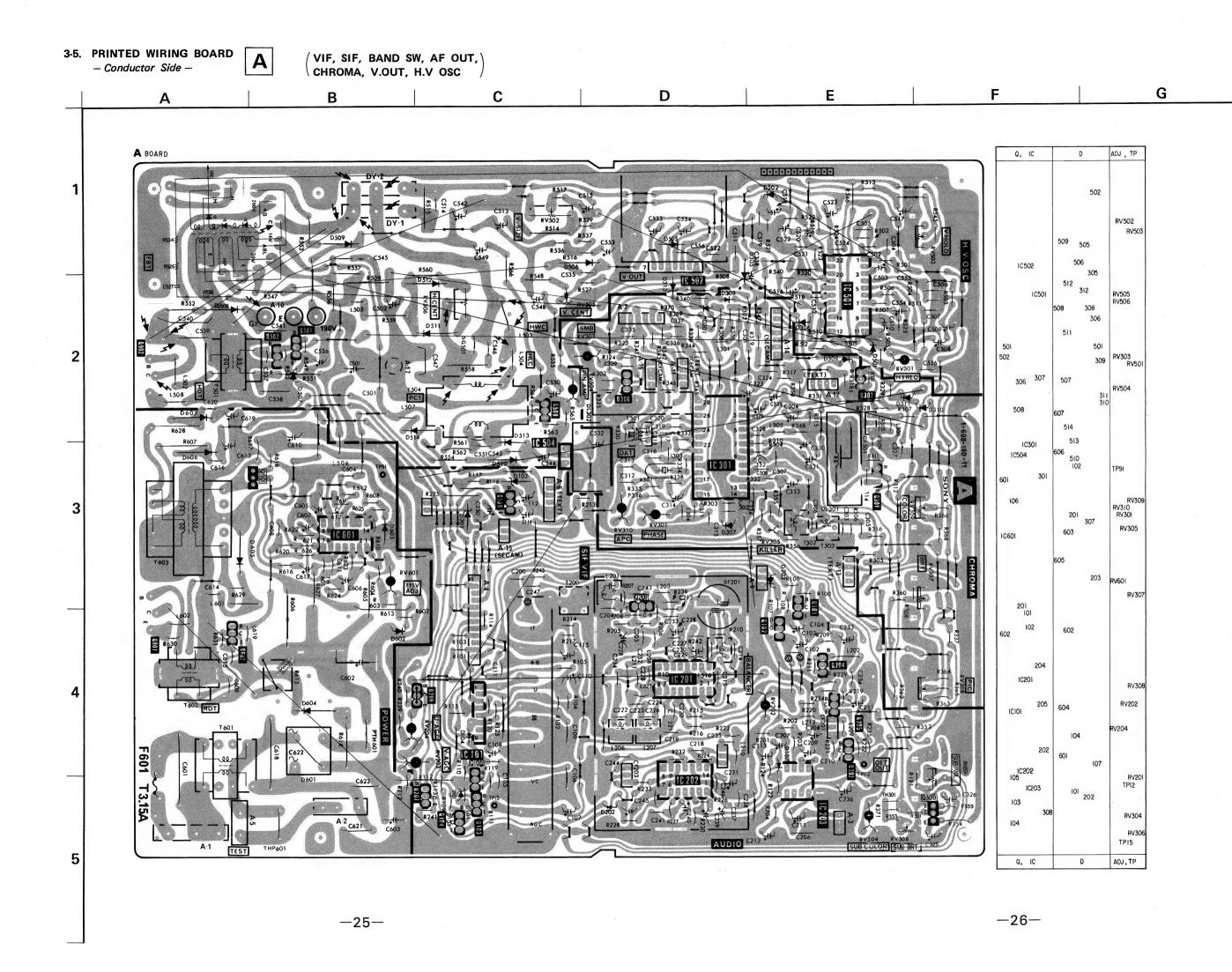
- All capacitors are in  $\mu$ F unless otherwise noted. pF:  $\mu\mu$ F 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6W unless otherwise noted.  $k\Omega = 1000\Omega, M\Omega = 1000k\Omega$
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- nonflammable resistor.
- fusible resistor.
- △ : internal component.
- : panel designation.
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- $\bullet~$  Readings are taken with a 10  $M\Omega$  digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken with a color-bar signal input.
- adjustment for repair.
- PAL color-bar signal received.
- \_\_\_\_: B + bus
- ----: B bus

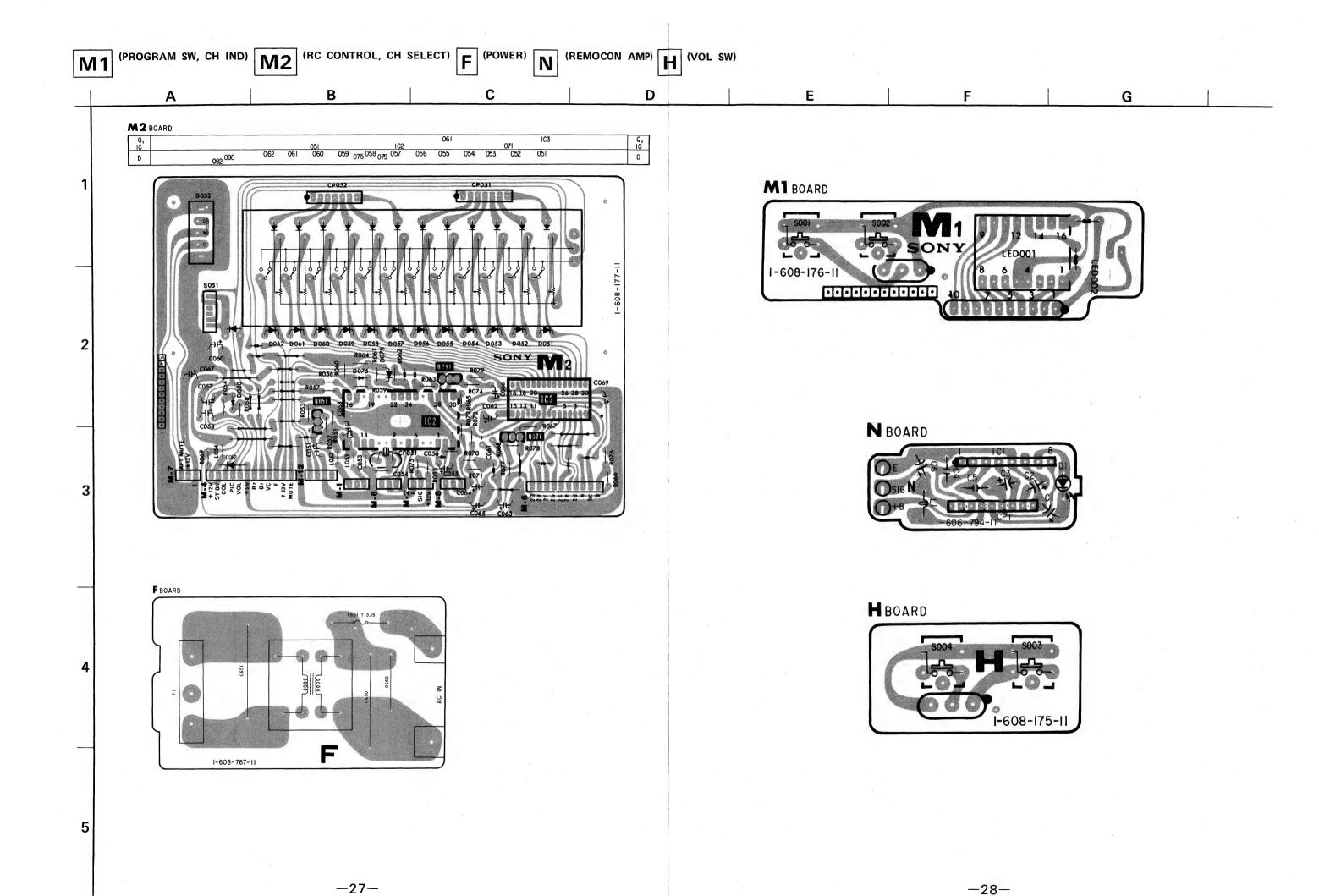
The components identified by shading and  $\hat{\Lambda}$  mark are critical for safety. Replace only with part number specified.



F G H I J K L M

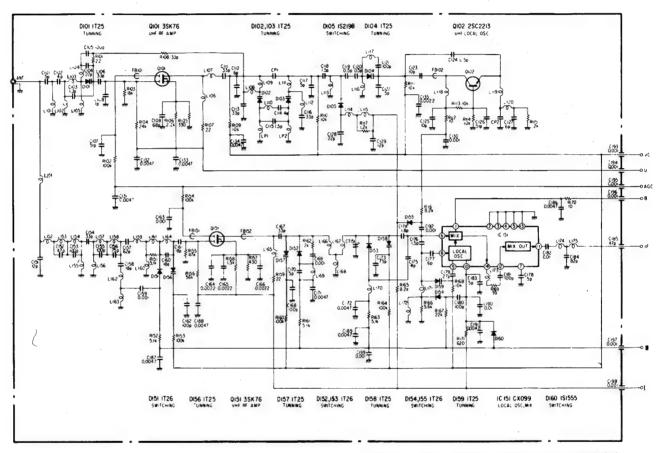




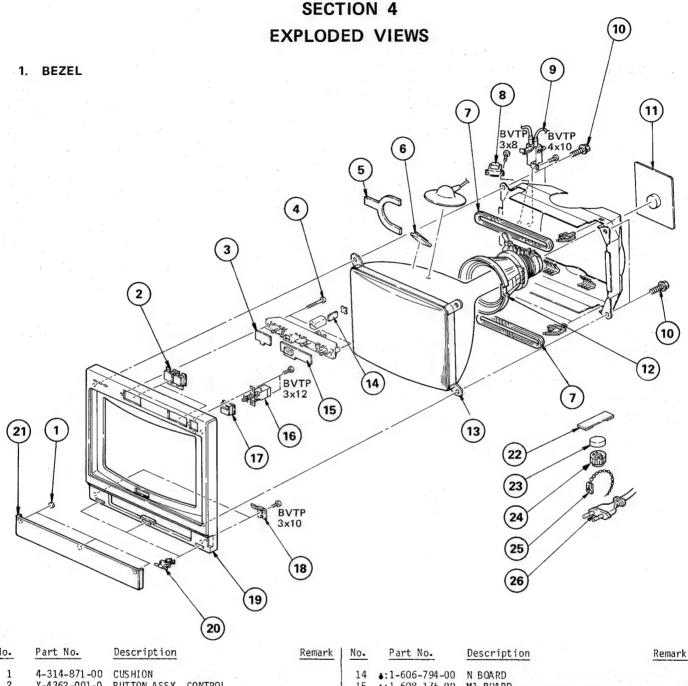


A B C D

#### 3-6. TUNER SCHEMATIC DIAGRAM BT-881



Note: Tuner reference numbers are not included in the Electrical Parts List.

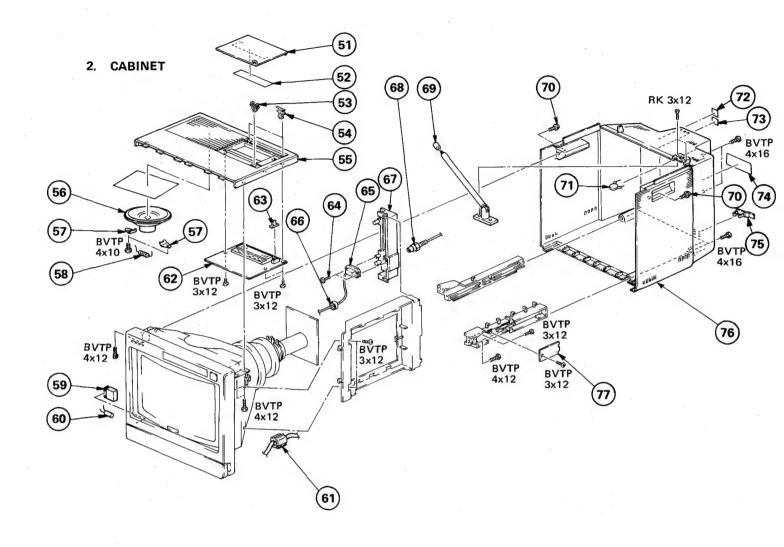


No.	Part No.	Description	Remark	No.	Part No.	<u>Description</u> Remar	<u>^k</u>
4 5 6 7 2 8 2 9 2 10 11 4 12 2	\$:1-608-175-00 3-703-083-00 1-452-146-00 3-703-003-00 1-426-086-31 1-427-528-00 1-226-733-31 4-307-249-00 \$:A-1330-383-A 1-451-185-00	CUSHION BUTTON ASSY, CONTROL H BOARD + BV 3X25 MAGNET, BMC SPACER, DY COIL, DE GAUSSING TRANSFORMER, OUTPUT: SOT RES ASSY, HIGH-VOLTAGE SCREW, TAPPING (5X20) C BOARD, COMPLETE DEFLECTION YOKE (SY-94C)		15 16 17 18 19 20 21 22 23 24 25	♦:1-606-794-00 ♦:1-608-176-00 Λ:1-553-225-00 X-4362-002-0 ♦:4-352-804-00 X-4362-005-0 3-703-035-11 X-4362-003-0 X-4308-815-0 1-452-032-00 4-308-870-00	N BOARD M1 BOARD SWITCH, PUSH BUTTON ASSY, POWER RETAINER, DOOR BEZEL ASSY SHAFT, LID DOOR ASSY PERMALLOY ASSY, CONVERGENCE MAGNET, DISK; 10mm/ MAGNET, ROTATABLE DISK; 15mm/ CLIP, LEADWIRE	
13 2	V•0-120-207-03	CRT (330MB22)		26	▲.1-534-817-XX	CORD, POWER	

#### NOTE:

- NOTE:
   Items with no part number and no description are not stocked because they are seldom required for routine service.
   The construction parts of an assembled part are indicated with a collation number in the remark column.

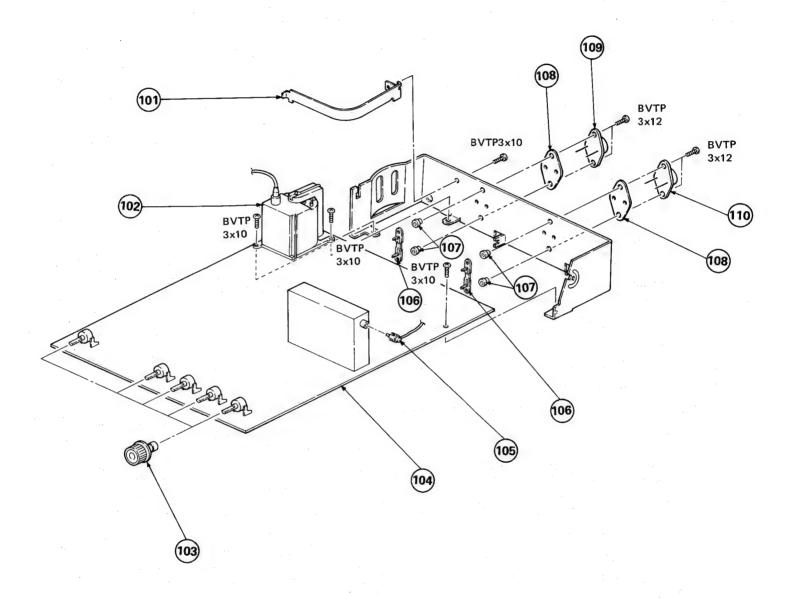
The components identified by shading and mark A are critical for safety.
Replace only with part number specified. 



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	X-4362-008-1	DOOR ASSY, PRESET		65	1-536-683-00	CONNECTOR, COAXIAL ANTENNA	
52	<b>▲:4-330-108-00</b>	LABEL, INSTRUCTION, PRESET		66	1-543-171-00	CORE, RING	
53	3-703-574-00	RETAINER, DOOR		67	4-362-011-00	PANEL, CONNECTOR	
54				68	1-556-054-00	ANT PLUG ASSY	
55	X-4362-004-0	PLATE ASSY, TOP	5	69	1-501-152-00	ROD ANTENNA, TYPE B	
56				. 70	3-701-810-81	SCREW, TERMINAL	
57	A:4-338-106-00	HOLDER, SPEAKER	•	71	1-161-491-00	CAP, CERAMIC 470PF	
58		RES, CARBON 120.00 (1/2W)		72	4-310-380-00	LABÉL, DEMKO	
59				73	4-310-381-00	LABEL, SEMKO	
60		CAP. ELECT (NONPOLAR) 2.2MF		74	★: 4-362-041-01	LABEL, MODEL NUMBER	
61	<u> </u>	HOLDER, AC CORD		75	4-329-127-00	CLAMP, CORD	
62		M2 BOARD, COMPLETE		76	X-4362-006-0	CABINET ASSY	
63	4-362-005-00	KNOB, AFT		77	<b>1-608-767-00</b>	F BOARD	
64	4-304-496-00	HEAD, WASHER, TAPPING SCREW					

The components identified by shading and mark A are critical for safety.
Replace only with part number specified.

#### 3. CHASSIS



No.	Part No.	<u>Description</u> Remar	No.	Part No.	Description	Remark
	A-1-439-294-00	RING, SHORT, FBT TRANSFORMER ASSY, FLYBACK: FBT KNOB CONTROL (B) ASSY	106 107 108		BRACKET, TRANSISTOR BUSHING (A), TRANSISTOR SPACER, MICA	
104		A BOARD, COMPLETE	109 110		TRANSISTOR 2SD898B TRANSISTOR 2SC1413A	

The components identified by shading and mark A are critical for safety. Replace only with part number specified.



#### 5 ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- Items marked " " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

• MF : μF, PF : μμF

RESISTORS

COILS

• All resistors are in ohms
• F: nonflammable

• MMH : mH, UH : μH

. Hom ranmable

					*				
Ref.	No.Part No.	Description	Remark	Ref.N	o.Part No.	Description			Remark
	Andrew State Control of the Control	F BOARD *******		C104 C107 C108 C109 C110	1-123-380-00 1-123-328-00 1-123-620-00 1-108-389-00 1-123-356-00	ELECT ELECT ELECT MYLAR ELECT	1MF 4.7MF 10MF 0.1MF 10MF	20% 20% 20% 10% 20%	50V 25V 25V 100V 16V
	↑ 1-108-745-00 ↑ 1-108-745-00 CON • 1-506-348-XX	MYLAR 0.22MF	20% 300V 20% 300V	C111 C112 C113 C114 C115	1-102-038-00 1-123-356-00 1-123-356-00 1-123-622-00 1-123-356-00	CERAMIC ELECT ELECT ELECT ELECT	0.001MF 10MF 10MF 22MF 10MF	20% 20% 20% 20%	500V 16V 16V 16V 16V
F 651	<b>4:1-533-087-00</b>	FUSE, TIME-LAG T3.15A HOLDER, FUSE, F651 ISTOR		C116 C200 C204 C205 C206	1-123-620-00 1-102-529-00 1-102-529-00 1-102-125-00 1-108-389-00	ELECT CERAMIC CERAMIC CERAMIC MYLAR	10MF 100PF 100PF 0.0047MF 0.1MF	20% 5% 5% 10% 10%	25V 50V 50V 50V 100V
	1-202-728-51 TRA	***	Account to the company of the compan	C207 C208 C209 C210 C211	1-121-705-00 1-123-328-00 1-123-333-00 1-102-973-00 1-123-322-00	ELECT ELECT ELECT CERAMIC ELECT	2.2MF 4.7MF 100MF 100PF 330MF	30% 20% 20% 5% 20%	25V 25V 16V 50V 16V
-11111111111111111111111111111111111111		A BOARD, COMPLETE		C212 C213 C214 C215 C218	1-123-820-00 1-102-125-00 1-102-125-00 1-102-125-00 1-101-006-00	ELECT CERAMIC CERAMIC CERAMIC CERAMIC	33MF 0.0047MF 0.0047MF 0.0047MF 0.047MF	20% 10% 10% 10%	16V 50V 50V 50V 50V
	<b>6</b> : 4-362-027-00 <b>6</b> : 4-362-028-00 <b>6</b> : 1-508-796-21 <b>6</b> : 1-551-611-00 <b>6</b> : 1-556-408-41	CASE (LOWER), SHIELD, CASE (UPPER), SHIELD, PIN, CONNECTOR 2P CONNECTOR ASSY, MINI. ( CONNECTOR ASSY (LARGE)	VIF 2P)	C219 C220 C221 C222 C223	1-102-125-00 1-102-125-00 1-102-125-00 1-102-529-00 1-102-937-00	CERAMIC CERAMIC CERAMIC	0.0047MF 0.0047MF 0.0047MF 100PF 4PF	10% 10% 10% 5% 0.25PF	50V 50V 50V 50V
	<b>4:</b> 4-336-030-00	CASE (MAIN), SHIELD, V	IF	C224	1-102-937-00	CERAMIC	4PF	0.25PF	
A1	◆ 1-506-348-XX			C225 C226 C227 C228	1-102-518-00 1-102-527-00 1-102-125-00 1-123-820-00		33PF 82PF 0.0047MF 33MF	5% 5% 10% 20%	50V 50V 50V 16V
A2 A3 A4 A5		3P PLUG (M) PIN, CONNECTOR 3P PLUG, CONNECTOR (2.5MM 2P PLUG (M) PLUG, CONNECTOR (2.5MM	•	C229 C230 C231 C233 C234	1-102-125-00 1-123-379-00 1-123-820-00 1-123-820-00 1-102-123-00	CERAMIC ELECT ELECT ELECT CERAMIC	0.0047MF 0.47MF 33MF 33MF 0.0033MF	10% 20% 20% 20%	50V 50V 16V 16V 50V
A7 A9 A11	<b>1-560-126-00</b> <b>1-560-123-00</b> <b>1-560-124-00</b>	PLUG, CONNECTOR (2.5MM PLUG, CONNECTOR (2.5MM PLUG, CONNECTOR (2.5MM PLUG, CONNECTOR (2.5MM	) 6P ) 3P PITCH) 4P PITCH) 4P	C235 C236 C237 C238	1-102-959-00 1-123-324-00 1-123-322-00 1-102-129-00	CERAMIC ELECT ELECT CERAMIC	22PF 1000MF 330MF 0.01MF	5% 20% 20% 10%	50V 16V 16V 50V
A13 A14 A15 A16	<b>a</b> : 1-560-124-00 <b>b</b> : 1-560-127-00 <b>a</b> : 1-560-123-00 <b>b</b> : 1-560-124-00	PLUG, CONNECTOR (2.5MM PLUG, CONNECTOR (2.5MM	PITCH) 7P PITCH) 3P	C239 C240 C241 C243	1-123-821-00 1-123-356-00 1-108-377-00 1-102-125-00	ELECT ELECT MYLAR CERAMIC	47MF 10MF 0.01MF 0.0047MF	20% 20% 10% 10%	16V 16V 100V 50V
	CAP	ACITOR		C244 C245	1-102-129-00 1-123-821-00	CERAMIC ELECT	0.01MF 47MF	10% 10% 20%	50V 16V
C100 C101 C102 C103	1-102-129-00 1-121-806-00		10% 50V 10% 50V 16V 20% 50V	C246 C248 C250		CERAMIC CERAMIC	0.01MF 0.0047MF 33MF	10% 10% 20%	50V 50V 25V



Ref.No.Part No.	Description		,	Remark	Ref.N	o-Part No.	Description			Remark
C251 1-123-328-00 C252 1-102-125-00 C253 1-102-125-00 C254 1-102-518-00 C257 1-102-125-00	CERAMIC CERAMIC CERAMIC	4.7MF 0.0047MF 0.0047MF 33PF 0.0047MF	20% 10% 10% 5% 10%	25V 50V 50V 50V 50V	C512 C513 C514 C515 C516	1-108-595-00 1-123-362-00 1-108-377-00 1-123-622-00 1-131-345-00	MYLAR ELECT MYLAR ELECT TANTALUM	0.047MF 330MF 0.01MF 22MF 0.47MF	5% 20% 10% 20% 10%	50V 50V 100V 16V 35V
C301 1-102-114-00 C302 1-102-114-00 C303 1-102-850-00 C304 1-123-356-00 C305 1-102-887-00	CERAMIC CERAMIC ELECT	470PF 470PF 56PF 10MF 47PF	10% 10% 5% 20% 5%	50V 50V 50V 16V 50V	C517 C518 C519 C520 C521	1-123-379-00 1-123-380-00 1-108-377-00 1-123-380-00 1-108-384-00	ELECT ELECT MYLAR ELECT MYLAR	0.47MF 1MF 0.01MF 1MF 0.039MF	20% 20% 10% 20% 10%	50V 50V 100V 50V 100V
C306 1-102-884-00 C307 1-102-678-00 C308 1-102-129-00 C309 1-102-129-00 C311 1-102-850-00	CERAMIC CERAMIC CERAMIC	33PF 100PF 0.01MF 0.01MF 56PF	5% 5% 10% 10% 5%	50V 50V 50V 50V 50V	C522 C523 C524 C526 C527	1-123-321-00 1-123-381-00 1-108-367-00 1-129-794-00 1-102-244-00	ELECT ELECT MYLAR FILM CERAMIC	220MF 2.2MF 0.0015MF 0.0033MF 220PF	20% 20% 10% 2% 10%	16V 50V 100V 100V 500V
C312 1-108-385-00 C313 1-108-385-00 C314 1-123-379-00 C315 1-102-887-00 C316 1-102-852-00	MYLAR ELECT CERAMIC	0.047MF 0.047MF 0.47MF 47PF 47PF	10% 10% 20% 5% 5%	100V 100V 50V 50V 50V	C532 C533 C534 C535 C536	1-123-333-00 1-123-360-00 1-123-346-00 1-102-038-00 1-123-328-00	ELECT ELECT ELECT CERAMIC ELECT	100MF 100MF 220MF 0.001MF 4.7MF	20% 20% 20% 20%	16V 50V 35V 500V 25V
C317 1-102-852-00 C318 1-102-513-00 C319 1-102-129-00 C320 1-102-129-00 C323 1-123-821-00	CERAMIC CERAMIC CERAMIC	47PF 18PF 0.01MF 0.01MF 47MF	5% 5% 10% 10% 20%	50V 50V 50V 50V 16V	C537 C538 C539 C540 C541	1-102-030-00 1-108-430-00 1-102-327-00 1-130-671-00 1-102-223-00	CERAMIC MYLAR CERAMIC FILM CERAMIC	330PF 0.056MF 330PF 0.0085MF 0.0047MF	10% 10% 15% 3% 20%	500V 200V 1.5KV 1.2KV 1.6KV
C324 1-108-385-00 C325 1-123-379-00 C326 1-123-382-00 C327 1-108-383-00 C328 1-101-880-00	ELECT ELECT MYLAR	0.047MF 0.47MF 3.3MF 0.033MF 47PF	10% 20% 20% 10% 5%	100V 50V 50V 100V 50V	C542 C543 C544 C545 C546	1-123-005-00 1-102-038-00 1-123-334-00 1-108-425-00 1-102-212-00	ELECT CERAMIC ELECT MYLAR CERAMIC	22MF 0.001MF 220MF 0.022MF 820PF	20% 10% 10%	250V 500V 25V 200V 500V
C329 1-131-371-00 C330 1-123-380-00 C331 1-123-382-00 C332 1-102-129-00 C333 1-123-380-00	ELECT CERAMIC	10MF 1MF 3.3MF 0.01MF 1MF	20% 20% 20% 10% 20%	16V 50V 50V 50V 50V	C547 C548 C549 C550 C551	1-130-684-00 1-123-620-00 1-123-003-00 1-123-286-00 1-108-377-00	FILM ELECT ELECT ELECT MYLAR	0.33MF 10MF 1MF 0.33MF 0.01MF	5% 20% 20% 10%	200V 25V 250V 50V 100V
C334 1-108-393-00 C335 1-102-947-00 C336 1-102-947-00 C337 1-102-947-00 C338 1-123-356-00	CERAMIC CERAMIC CERAMIC	0.22MF 10PF 10PF 10PF 10MF	10% 5% 5% 5% 20%	100V 50V 50V 50V 16V	C552 C553 C554 C555 C556	1-108-381-00 1-123-620-00 1-123-356-00 1-108-385-00 1-102-228-00	MYLAR ELECT ELECT MYLAR CERAMIC	0.022MF 10MF 10MF 0.047MF 470PF	10% 20% 20% 10% 10%	100V 25V 16V 100V 500V
C339 1-123-380-00 C340 1-123-380-00 C501 1-123-024-00 C502 1-102-228-00 C503 1-123-607-00	ELECT ELECT CERAMIC	1MF 1MF 33MF 470PF 0.1MF	20% 20% 10% 20%	50V 50V 160V 500V 50V	C601 C602 C603 C604 C605	1-108-745-00 1-125-318-00 1-121-999-00 1-101-810-00 1-123-356-00	MYLAR ELECT (BLOCK) ELECT CERAMIC ELECT	0.22MF 220MF 10MF 100PF 10MF	20% 20% 5% 20%	300V 400V 160V 500V 16V
C504 1-108-377-00 C505 1-101-810-00 C506 1-108-381-00 C507 1-108-563-00 C508 1-123-380-00	CERAMIC MYLAR MYLAR	0.01MF 100PF 0.022MF 0.0022MF 1MF	10% 5% 10% 5% 20%	100V 500V 100V 50V 50V	C606 C607 C608 C609 C610	1-123-381-00 1-123-381-00 1-108-381-00 1-108-417-00 1-123-024-00	ELECT ELECT MYLAR MYLAR ELECT	2.2MF 2.2MF 0.022MF 0.0047MF 33MF	20% 20% 10% 10%	50V 50V 100V 200V 160V
C509 1-123-380-00 C510 1-123-321-00 C511 1-108-385-00	ELECT	1MF 220MF 0.047MF	20% 20% 10%	50V 16V 100V	C611 C612 C613	1-102-973-00 1-108-563-00 1-123-335-00	CERAMIC MYLAR ELECT	100PF 0.0022MF 330MF	5% 5% 20%	50V 50V 25V

The components identified by shading and mark A are critical for safety. Replace only with part number specified.



Ref.No.Part No.	Description			Remark	Ref.No	Part No.	Description		Remark
C614 1-102-327-00 C615 1-102-030-00 C616 1-102-030-00 C617 1-123-021-00 C618 A:1-108-745-00	CERAMIC CERAMIC ELECT	330PF 330PF 330PF 0.47MF 0.22MF	15% 10% 10% 30% 20%	1.5KV 500V 500V 50V 300V		***************************************	DELAY LINE, Y DELAY LINE		
C619 1-123-324-00 C620 1-102-030-00 C621 1-161-964-00 C622 1-161-964-00 C623 1-161-964-00	ELECT CERAMIC CERAMIC CERAMIC	1000MF 330PF 0.0047MF 0.0047MF 0.0047MF	20% 10%	16V 500V 250V 250V 250V		1-506-348-XX 1-506-348-XX FUS	3P PLUG (L)		
FIL	TER						FUSE, TIME-LAG HOLDER, FUSE.	3.15A	
CF202 1-527-263-00		R (5.5MHZ)			IC101 IC201	1C 8-759-600-15 8-759-276-07	IC M54570L IC TA7607AP		
DIC					IC203=	8-759-113-82 8-759-157-52 8-759-113-65	IC UPC1382C IC UPC575C		
D101 8-759-157-40 D102 8-719-102-71 D104 8-719-911-19 D107 8-719-911-19 D201 =>8-719-930-12	DIODE RD5.6E- DIODE 1SS119 DIODE 1SS119				IC501 IC502= IC504	8-759-113-60 8-759-113-78 8-759-700-06 :4-323-833-00	IC UPC1377C UPC1378H-L	OUT. 1C504	
D202 8-719-911-19 D203 8-719-911-19 D305 8-719-100-22 D306 8-719-911-19 D307 8-719-911-19	DIODE 1SS119 DIODE RD4.3E- DIODE 1SS119	81			IC601	8-759-100-75 <u>COI</u> 1-404-431-00	IC UPC1394C <u>L</u> VIFT		
D308 8-719-911-19 D309 8-719-911-19 D310 8-719-911-19 D311 8-719-911-19 D312 8-719-102-89	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119 DIODE RD10E-N	11			L202 L203 L205 L206	1-408-247-00 1-408-397-00 1-404-428-00 1-404-427-00	MICRO INDUCTOR MICRO INDUCTOR VIFT VIFT VIFT	1UH	
D313 8-719-911-19 D501 8-719-911-19 D502 8-719-911-19 D505 =>8-719-911-55 D506 8-719-901-93	DIODE 1SS119 DIODE 1SS119				L208 L209 L210 L211	1-408-406-00 1-408-409-00 1-408-412-00 1-408-406-00	MICRO INDUCTOR MICRO INDUCTOR MICRO INDUCTOR MICRO INDUCTOR MICRO INDUCTOR	10UH 18UH 5.6UH	
D507 8-719-911-19 D508 8-719-903-09 D509 =>8-719-300-76 D510 =>8-719-901-93	DIODE 1SS119 DIODE V30N DIODE RH1A				L302 L303 L304 L305	1-408-408-00 1-408-409-00 1-408-415-00 1-408-409-00	MICRO INDUCTOR MICRO INDUCTOR MICRO INDUCTOR MICRO INDUCTOR	10UH 33UH 10UH	
D511 =>8-719-911-55 D512 =>8-719-911-55 D513 =>8-719-911-55 D514 =>8-719-911-55	DIODE UOSG				L306 L502 L503 L504 L505	1-408-411-00 1-408-225-00 1-459-292-00 1-459-295-00 1-407-498-00	MICRO INDUCTOR MICRO INDUCTOR COIL, FERRITE COIL, FERRITE MICRO INDUCTOR	3.3UH (HWC) (HLC)	
D601 8-719-503-06 D602 8-719-911-19 D603 8-719-102-74	DIODE S3WB60Z DIODE 1SS119 DIODE RD6.2E-				L506 L507 L508	1-459-215-00 1-407-717-00 1-407-365-00	MICRO INDUCTOR	1MMH IGH FREQUENCY) 0	• 7UH
D604 =>8-719-911-55 D605 8-719-925-06 D606 => <b>8-719-901-93</b> D607 8-719-982-04 D608 => <b>8-719-911-19</b>	DIODE ERC25-0 DIODE V19E DIODE ERB81-0				L601 L602			IGH FREQUENCY) 0	• 7UH

The components identified by shading and mark <u>A</u> are critical for safety. Replace only with part number specified.



Ref.No.Part No.	Description		Remark	Ref.No	Part No.	Description			Remark
PTH601 1-800-820-00	RMISTOR THERMISTOR, POWER NSISTOR			R205 R206 R207 R208 R209	1-247-847-00 1-247-815-00 1-247-845-00 1-247-815-00 1-247-879-00	CARBON CARBON CARBON CARBON CARBON	4.7K 5 220 5 3.9K 5 220 5 100K 5	% 1/6W % 1/6W % 1/6W	
Q101 8-729-178-54 Q102 8-769-200-20 Q103 8-729-117-54 Q104 8-729-178-54 Q105 8-729-178-54	TRANSISTOR 2SC2785 TRANSISTOR 2SK107-C TRANSISTOR 2SA1175 TRANSISTOR 2SC2785 TRANSISTOR 2SC2785		•	R210 R211 R213 R214 R215	1-247-837-00 1-247-825-00 1-247-841-00 1-247-877-00 1-247-831-00	CARBON CARBON CARBON CARBON CARBON	1.8K 5 560 5 2.7K 5 82K 5 1K 5	% 1/6W % 1/6W % 1/6W	
0106 8-729-177-43 0201 8-765-300-00 0202 =>8-729-612-77 0204 8-729-178-54 0205 8-729-117-54	TRANSISTOR 2SD774 TRANSISTOR 2SC2009 TRANSISTOR 2SA1027F TRANSISTOR 2SC2785 TRANSISTOR 2SA1175	<b>3</b>		R216 R217 R219 R220 R221	1-247-831-00 1-247-867-00 1-247-865-00 1-247-813-00 1-247-807-00	CARBON CARBON CARBON CARBON CARBON	1K 5 33K 5 27K 5 180 5 100 5	% 1/6W % 1/6W % 1/6W	
Q301 8-72 9-178-54 Q306 8-72 9-117-54 Q307 8-72 9-178-54 Q308 8-72 9-245-83 Q501 =>8-72 9-663-47	TRANSISTOR 2SC2785 TRANSISTOR 2SA1175 TRANSISTOR 2SC2785 TRANSISTOR 2SC2458 TRANSISTOR 2SC1364			R222 R223 R224 R225 R226	1-244-863-51 1-247-831-00 1-247-831-00 1-212-874-00 1-247-839-00	CARBON CARBON CARBON FUSIBLE CARBON	390 5 1K 5 1K 5 51 5 2.2K 5	% 1/6W % 1/6W % 1/4W	F :
Q502 8-72 9-168-82 Q508 =>8-72 9-177-43 Q601 8-72 9-163-93 Q602 8-72 9-195-82	TRANSISTOR 2SC2688 TRANSISTOR 2SD774 TRANSISTOR 2SA639S TRANSISTOR 2SC2958			R227 R228 R229 R230 R232	1-247-847-00 1-247-871-00 1-247-889-00 1-247-831-00 1-247-823-00	CARBON CARBON CARBON CARBON CARBON	4.7K 5 47K 5 270K 5 1K 5 470 5	% 1/6W % 1/6W % 1/6W	
RES	SISTOR			R233	1-247-815-00	CARBON	220 5	% 1/6W	
R100 1-247-871-00 R101 1-247-839-00 R102 1-247-879-00 R103 1-247-839-00	CARBON 47K CARBON 2.2K CARBON 100K CARBON 2.2K CARBON 6.2K	5% 1/6W 5% 1/6W 5% 1/6W 5% 1/6W 5% 1/6W	! !	R234 R235 R236 R236	1-247-813-00 1-247-813-00 1-247-823-00 1-247-835-00	CARBON CARBON CARBON CARBON	47K 5 180 5 470 5 1.5K 5	% 1/6W % 1/6W % 1/6W	
R104 1-247-850-00 R105 1-247-869-00 R106 1-247-871-00 R107 1-247-895-00 R108 1-247-879-00 R109 1-247-877-00	CARBON 6.2K  CARBON 39K  CARBON 47K  CARBON 47OK  CARBON 100K  CARBON 82K	5% 1/6v 5% 1/6v 5% 1/6v 5% 1/6v 5% 1/6v	! !	R242 R243 R244 R301 R302	1-247-901-00 1-247-804-00 1-247-811-00 1-247-843-00 1-247-853-00	CARBON CARBON CARBON CARBON CARBON	82 0K 5 75 5 150 5 3.3K 5 8.2K 5	% 1/6W % 1/6W % 1/6W	
R109 1-247-877-00  R110 1-247-895-00  R111 1-247-875-00  R112 1-206-694-00  R113 1-247-879-00  R114 1-247-855-00	CARBON 470K CARBON 68K METAL 18K CARBON 100K CARBON 10K	5% 1/6v 5% 1/6v 5% 2W 5% 1/6v 5% 1/6v	F	R303 R304 R305 R306 R307	1-247-855-00 1-247-807-00 1-247-807-00 1-247-855-00 1-247-817-00	CARBON CARBON CARBON CARBON CARBON	10K 5 100 5 100 5 10K 5 270 5	% 1/6W % 1/6W % 1/6W	
R115 1-247-855-00 R116 1-212-938-00 R117 1-247-831-00 R119 1-247-891-00 R121 1-247-849-00	CARBON 10K FUSIBLE 1.5 CARBON 1K CARBON 330K CARBON 5.6K	5% 1/6V 5% 1/2V 5% 1/6V 5% 1/6V	I I F I	R308 R309 R310 R311 R312	1-247-845-00 1-247-843-00 1-247-807-00 1-247-843-00 1-247-835-00	CARBON CARBON CARBON CARBON CARBON	3.9K 5 3.3K 5 100 5 3.3K 5 1.5K 5	% 1/6W % 1/6W % 1/6W	
R122 1-247-879-00 R124 1-247-871-00 R126 1-247-867-00 R201 1-247-871-00 R202 1-247-883-00	CARBON 100K CARBON 47K CARBON 33K CARBON 47K CARBON 150K	5% 1/60 5% 1/60 5% 1/60 5% 1/60 5% 1/60	   	R313 R314 R315 R316 R317	1-247-835-00 1-247-831-00 1-247-835-00 1-247-831-00 1-247-885-00	CARBON CARBON CARBON CARBON CARBON	1.5K 5 1K 5 1.5K 5 1K 5 180K 5	% 1/6W % 1/6W % 1/6W	
R203 1-247-881-00 R204 1-247-835-00	CARBON 120K	5% 1/6	1	R318 R319 R323	1-247-849-00 1-247-855-00 1-247-815-00	CARBON CARBON CARBON	5.6K 5 10K 5 220 5	% 1/6W	



Ref.No.Part No.	Description			Remark	Ref.N	o.Part No.	Description				Remark
R324 1-247-815-00 R325 1-247-821-00 R328 1-247-843-00 R329 1-247-871-00 R330 1-247-827-00	CARBON CARBON CARBON	220 5% 390 5% 3.3K 5% 47K 5% 680 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R511 R512 R513 R514 R515	1-247-871-00 1-214-171-00 1-247-867-00 1-212-364-00 1-244-859-51	CARBON METAL CARBON METAL CARBON	47K 43K 33K 2•2 270	5% 1% 5% 5%	1/6W 1/4W 1/6W 1W 1/2W	F
R331 1-247-871-00 R332 1-247-877-00 R333 1-247-831-00 R334 1-247-829-00 R335 1-247-865-00	CARBON CARBON CARBON	47K 5% 82K 5% 1K 5% 82O 5% 27K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R516 R517 R518 R519 R520	1-247-844-00 1-247-837-00 1-247-873-00 1-247-859-00 1-247-864-00	CARBON CARBON CARBON CARBON CARBON	3.6K 1.8K 56K 15K 24K	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	÷ .
R336 1-247-865-00 R337 1-247-853-00 R338 1-247-839-00 R339 1-247-850-00 R340 1-247-843-00	CARBON CARBON CARBON	27K 5% 8.2K 5% 2.2K 5% 6.2K 5% 3.3K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R521 R522 R523 R524 R525	1-247-864-00 1-247-839-00 1-247-845-00 1-247-817-00 1-247-859-00	CARBON CARBON CARBON CARBON CARBON	24K 2.2K 3.9K 270 15K	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R341 1-247-819-00 R342 1-247-819-00 R343 1-247-819-00 R344 1-247-843-00 R345 1-247-843-00	CARBON CARBON	330 5% 330 5% 330 5% 3.3K 5% 3.3K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R526 R527 R528 R529 R534	1-202-816-00 1-246-469-00 1-202-830-00 1-247-769-00 1-202-832-51	COMPOSITION CARBON COMPOSITION CARBON COMPOSITION	68K 680 10K 2.7 15K	5% 5%	1/2W 1/4W 1/2W 1/6W 1/2W	
R346 1-247-843-00 R347 1-247-815-00 R348 1-247-835-00 R350 1-247-807-00 R351 1-247-807-00	CARBON CARBON CARBON	3.3K 5% 220 5% 1.5K 5% 100 5% 100 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R535 R536 R537 R539 R540	1-247-837-00 1-247-845-00 1-247-843-00 1-247-813-00 1-247-830-00	CARBON CARBON CARBON CARBON CARBON	1.8K 3.9K 3.3K 180 910	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R352 1-247-855-00 R353 1-247-863-00 R354 1-246-465-00 R355 1-247-835-00 R356 1-247-843-00	CARBON CARBON	10K 5% 22K 5% 470 5% 1.5K 5% 3.3K 5%	1/6W 1/6W 1/4W 1/6W 1/6W		R542 R545 R546 R547 R548	1-247-847-00 1-247-855-00 1-247-005-00 1-246-979-00 1-246-994-00	CARBON CARBON CARBON CARBON CARBON	4.7K 10K 100 1.2 680	5% 5% 5% 5%	1/6W 1/6W 1/4W 1/8W 1/8W	F F
R357 1-247-887-00 R359 1-247-863-00 R360 1-247-895-00 R361 1-247-857-00 R362 1-247-855-00	CARBON CARBON	220K 5% 22K 5% 470K 5% 12K 5% 10K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R549 R550 R551 R552 R553	1-247-847-00 1-247-819-00 1-213-148-00 1-246-783-00 1-246-979-00	CARBON CARBON METAL CARBON CARBON	4.7K 330 2.7K 1K 1.2	5% 5% 5% 5%	1/6W 1/6W 1W 1/8W 1/8W	F F
R363 1-247-861-00 R364 1-247-867-00 R365 1-247-875-00 R366 1-247-865-00 R368 1-247-857-00	CARBON CARBON CARBON CARBON CARBON	18K 5% 33K 5% 68K 5% 27K 5% 12K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R554 R556 R557 R558 R559	1-212-936-51 1-246-493-00 1-246-531-00 1-213-139-00 1-212-372-00	FUSIBLE CARBON CARBON METAL METAL	1.2 6.8K 270K 470 10	5% 5% 5% 5%	1/2W 1/4W 1/4W 1W	F F
R369 1-247-831-00 R370 1-247-843-00 R371 1-247-840-00 R501 1-247-819-00 R502 1-247-855-00	CARBON	1K 5% 3.3K 5% 2.4K 5% 330 5% 10K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R560 R561 R562 R563 R564	1-246-996-00 1-247-835-00 1-247-032-00 1-247-801-00 1-247-865-00	CARBON CARBON CARBON CARBON CARBON	2.2K 1.5K 68 56 27K	5% 5% 5% 5%	1/8W 1/6W 1/8W 1/6W 1/6W	F F
R503 1-247-843-00 R504 1-247-868-00 R505 1-247-855-00 R506 1-247-855-00 R507 1-247-861-00	CARBON CARBON CARBON	3.3K 5% 36K 5% 10K 5% 10K 5% 18K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R565 R566 R602 R603 R604	1-247-846-00 1-211-481-11 1-247-879-00 1-247-829-00 1-247-840-00	CARBON CARBON CARBON CARBON CARBON	4.3K 18K 100K 820 2.4K	5% 5% 5% 5% 5%	1/6W 1/8W 1/6W 1/6W 1/6W	F
R508 1-211-409-00 R509 1-213-158-00 R510 1-247-867-00	METAL	10 5% 18K 5% 33K 5%	1/8W 1W 1/6W	F ·	R605 R606 R607	1-202-730-51 1-214-597-00 1-217-465-00	COMPOSITION METAL FUSIBLE	8.2M 100K 0.47	10% 5% 10%	1/2W 2W 1W	F



Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark
R608	1-247-819-00	CARBON 33	30 5%	1/6W		1	TRA	NSFORMER			
R609	1-247-871-00			1/6W							
R610	1-247-871-00			1/6W		T301	1-426-121-00		DIE TOT		
R611	1-247-869-00		OK 5%	1/6W		T302	1-408-520-00	COIL, VARIA			
R612	1-247-879-00	CARBON 10	OK 5%	1/6W		T303	1-408-520-00 1-437-090-00	COIL, VARIA	DLE 101		
R613	1-206-686-00	METAI 8.	2K 5%	2W	F	T504	1-421-351-00				
R614	1-213-159-00			1W	F						
R615	1-205-687-00			7W		T601 /	1-421-426-00	TRANSFORMER	, FERRITE; L	FT	
R616	1-247-855-00		OK 5%	1/6W		T602	1-446-194-00	TRANSF ORMER			
R617	1-217-194-00	WIREWOUND 0.	.33 10%	2W	F	T603	1-421-559-00	TRANSF ORMER	, FERRITE (S	.R.T)	
0.610	1 046 705 00	040001 10	בע בע	1 (0)			TUE	DMICTOR			
R618	1-246-795-00		OK 5%	1/8W			IHE	RMISTOR			
R619	1-247-889-00		70K 5% 50 5%	1/6W		TH301	1-800-945-00	THERMICTOR	s 10v		
R620 R621	1-247-825-00 1-247-829-00			1/6W 1/6W		TH501	1-806-213-00		3-10/		
R622	1-247-879-00		00K 5%	1/6W			1-800-945-00		5-10K		
NOL Z	1-24/-0/3-00	CARDON 10	70K 3/6	1/01			<u> </u>				
R623	1-247-855-00	CARBON 10	)K 5%	1/6W		The state of the s		SERVICE CONTRACTOR CON	A THE OR AND THE PROPERTY OF THE PARTY OF TH		77324944
R624	1-247-865-00	CARBON 27	7K 5%	1/6W		1	TUN	IER			
R625	1-247-891-00	CARBON 33	30K. 5%	1/6W						m++++++	
R626	1-247-873-00	CARBON 56	5K 5%	1/6W		TU201/	1-463-350-31	TUNER, ET (	BT-881)		
R627	1-202-463-00	COMPOSITION 2.	2M 5%	1/4W			00.1	20741			
R628	1-217-465-00	Elicible 0	47 10%	1W	F		LRY	STAL			
R629	1-247-831-00			1/6W	•	X301	1-527-345-00	CRYSTAL, OS	C 4.43MHz		
R630	1-247-805-00	CARBON 82		1/6W				J			
R631	1-247-851-00		8K 5%	1/6W		*****	*****	******	*****	*****	*****
		TABLE DECICEOD					. 1 1 201 A12 A	M2 DOADD C	OMDLETE		
	VAR	IABLE RESISTOR				•	:A-1301-413-A	M2 BOARD, CO	*****		
RV201	1-228-817-00	RES, VAR, CARBON	1 50K								
RV202	1-228-731-00	RES, ADJ, CERAMI	C CARBON	470K			1-228-818-00	VOLUME BLOCK	K, PRESET		
	1-228-723-00					ļ					
	1-228-720-00						CAP	ACITOR			
RV303	1-228-719-00	RES, ADJ, CERAMI	C CARBON	4/0	•	C051	1-123-612-00	FLECT	2.2MF	20%	50V
DASON	1-228-723-00	RES, ADJ, CERAMI	C CADRON	1 7V		C052	1-123-622-00		22MF	20%	16V
		RES, ADJ, SOLID		T+ / IX		C052	1-102-108-00		150PF	10%	50V
		RES, ADJ, CERAMI		1.0K		C054	1-102-108-00		150PF	10%	50V
		RES, VAR, CARBON		ION		C055	1-123-611-00		1MF	20%	50V
	1-228-816-00	RES. VAR. CARBON	1 20K			0033	1-125-011-00	LLLOI	2111	2070	
						C056	1-102-074-00	CERAMIC	0.001MF	10%	50V
RV309	1-228-816-00	RES. VAR. CARBON	N 20K			C057	1-123-613-00	ELECT	3.3MF	20%	507
RV310	1-228-723-00	RES, ADJ, CERAMI	C CARBON	4.7K		C058	1-123-613-00	ELECT	3.3MF	20%	507
	1-228-160-11					C060	1-123-613-00	ELECT	3.3MF	20%	50V
		RES, ADJ, CARBON	V 500			C062	1-123-611-00	ELECT	1MF	20%	50V
RV503	1-228-816-00	RES, VAR, CARBON	N 20K				1 100 010 11	51 50 5	00115	004	OFN
	1 000 704 00	050 151 050447		1.01		C063	1-123-818-11		22MF	20%	25V
RV504	1-228-724-00	RES, ADJ, CERAMI	C CARBON	TUK		C064	1-123-619-00		4.7MF	20%	50V
RV505	1-224-250-XX	RES, ADJ, METAL	GLAZE 2.	ZK			1-123-619-00		4.7MF	20%	50V
		RES, ADJ, WIREWO		2 24		C066	1-123-613-00		3.3MF	20%	50V
KAPOT	1-220-721-00	RES, ADJ, CERAMI	C CAKBUN	2.2K		C067 	1-123-620-00	ELECT	10MF	20%	25V
	FIL	TER				C068	1-123-620-00	ELECT	10MF	20%	25 <b>V</b>
	-					C069	1-123-611-00	ELECT	1MF	20%	50 <b>V</b>
	1-404-433-00		25201				F++	TED			
٠	:4-336-029-00	PLATE, SHIELD, S	5F ZU I			1	FIL	TER			
	SPA	RK GAP				CF051	1-527-476-00	OSCILLATOR.	CERAMIC		
	31.1.					[					

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SG501 1-519-063-XX DISCHARGING GAP

# M2 M1 C

Ref.No.Part No.	Description	Remark	Ref.No.Part	No.	Description				Remark
DIG D051 8-719-911-19 D052 8-719-911-19 D053 8-719-911-19 D054 8-719-911-19	DIODE 1SS119 DIODE 1SS119		R061 1-247 R062 1-247 R063 1-247	7-867-00 7-871-00 7-871-00 7-871-00 7-867-00	CARBON CARBON CARBON CARBON CARBON	33K 47K 47K 47K 33K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
D055 8-719-911-19 D056 8-719-911-19 D057 8-719-911-19 D058 8-719-911-19 D059 8-719-911-19	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119		R066 1-247 R067 1-247 R068 1-247	7-839-00 7-833-00 7-865-00 7-875-00 7-831-00	CARBON CARBON CARBON CARBON CARBON	2.2K 1.2K 27K 68K 1K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
D060 8-719-911-19 D061 8-719-911-19 D062 8-719-911-19 D075 8-719-911-19 D079 8-719-911-19	DIODE 1SS119 DIODE 1SS119		R071 1-247 R072 1-247 R073 1-247	7-849-00 7-849-00 7-833-00 7-833-00 7-871-00	CARBON CARBON CARBON CARBON CARBON	5.6K 5.6K 1.2K 1.2K 47K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
D080 8-719-911-19	DIODE 1SS119 DIODE 1SS119		R076 1-247 R077 1-247 R078 1-247	7-815-00 7-825-00 7-855-00 7-855-00 7-863-00	CARBON CARBON CARBON CARBON CARBON	220 560 10K 10K 22K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
1C2 8-759-600-03 1C3 8-759-600-44			S052 1-553	<u>SWI</u> 3-651-00	<u>rch</u> switch, slide				
L052 1-408-462-11 L053 1-408-462-11	MICRO INDUCTOR 470UH MICRO INDUCTOR 470UH MICRO INDUCTOR 470UH			******* 8-176-00	**************************************	*****	****	*****	*****
cor	NNECTOR				CONNECTOR (2.			ΩD	
	PLUG, CONNECTOR 3P PLUG, CONNECTOR 3P PLUG, CONNECTOR 12P		•: 1-35	DI 01		1 (2.5	mai) I	Or .	
M5 4:1-560-278-00 M6 4:1-560-278-00	PLUG, CONNECTOR 10P PLUG, CONNECTOR 3P		LED001 8-719		DIODE TLR320				
M7 <b>\$:1-560-278-00</b> M8 <b>\$:1-560-278-00</b> M12 <b>\$:1-560-278-00</b>	PLUG, CONNECTOR 3P PLUG, CONNECTOR 3P PLUG, CONNECTOR 4P				SWITCH, KEY B SWITCH, KEY B				
TRA	NSISTOR		*******	*****	*****	*****	****	******	*******
Q051 8-729-117-54 Q061 =>8-729-245-83 Q071 8-729-178-54	TRANSISTOR 2SA1175 TRANSISTOR 2SC2458 TRANSISTOR 2SC2785		<b>♦:</b> A-133	30-383 <b>-</b> A	C BOARD, COMP	LETE			
RES	SISTOR			8-174-00 6-645-00	C BOARD SOCKET, CRT				
R051 1-247-857-00	· · · · · · · · · · · · · · · · · · ·	/6W		CON	NECTOR				
R052 1-247-871-00 R053 1-247-871-00 R054 1-247-859-00 R055 1-247-879-00	CARBON 47K 5% 1/ CARBON 15K 5% 1/	/6W /6W /6W /6W	C3 • 1-506	6-348-XX	2P PLUG (M) 3P PLUG (L) PLUG, CONNECT	OR (2.	5MM )	6P	
R056 1-247-863-00 R057 1-247-863-00		/6W /6W		CAPA	ACITOR				
R057 1-247-803-00 R058 1-247-849-00 R059 1-247-871-00	CARBON 5.6K 5% 1,	/6W /6W		3-816-00 9-737-00		47MF 0.047M		20% 20%	50V 630V

### CHN

Ref.No	Part No.	Description			Remark	Ref.No.Part No.	Description	Remark
C703 C705 C706	1-102-249-00 1-101-361-00 1-102-978-00	CERAMIC CERAMIC CERAMIC	680PF 150PF 220PF	20% 5% 5%	2KV 50V 50V	<b>♦:1-608-175-00</b>	H BOARD	
C707 C708	1-101-361-00 1-102-155-00	CERAMIC CERAMIC	150PF 330PF	5% 20%	50V 2KV	<b>♦:</b> 1-556-331-00		3P
	COI	L					I TCH	
L701	1-407-708-00						SWITCH, KEY BOARD SWITCH, KEY BOARD	
L702	1-421-329-00		10UH			*****	********	******
0.701		NSISTOR	000000			<b>a</b> :1-606-794-00	N BOARD	
0701 0702 0703	8-729-322-78 8-729-322-78 8-729-322-78	TRANSISTOR S TRANSISTOR S TRANSISTOR S	2SC2278			<b>♦:1-556-332-00</b> <b>♦:4-342-117-00</b>	CONNECTOR (2.5MM) 3P	
	RES	ISTOR				<b>♦:4-342-118-00</b>		
R077 R701	1-247-767-00 1-247-821-00	CARBON CARBON	5.6K 390 5%	1/6W 1/6W		CA	PACITOR	
R702 R703	1-247-847-00 1-206-692-00	CARBON METAL	4.7K 5% 15K 5%	1/6W 2W	F	C1 1-123-617-00 C2 1-123-617-00	ELECT 10MF	20% 16V 20% 16V
R704	1-247-847-00	CARBON	4.7K 5%	1/6W		C3 1-123-617-00 C4 1-161-019-00	CERAMIC 0.033MF	20% 16V 10% 25V
R705 R706	1-247-819-00 1-206-692-00	CARBON METAL	330 5% 15K 5%	1/6W 2W	F <sup>'</sup>	C5 1-108-567-00 C6 1-123-821-00		5% 50V 20% 16V
R707 R708	1-247-823-00	CARBON CARBON	470 5% 4.7K 5% 15K 5%	1/6W 1/6W 2W	F		ODE 47781	20% 101
R709 R710	1-206-692-00 1-202-824-00	METAL COMPOSITION		1/2W	•	_	DIODE PH302B	
R711 R713	1-202-842-51 1-202-824-00	COMPOSITION COMPOSITION	220K	1/2W 1/2W		10		
R714 R715	1-202-814-51 1-202-815-51	COMPOSITION COMPOSITION	33K	1/2W 1/2W			IC UPC1373H	
R716	1-202-824-00	COMPOSITION		1/2W		<u>co</u>	IL	
R717 R718	1-202-719-00 1-202-549-00	COMPOSITION	100 10	% 1/2W		L1 1-404-310-00	COIL 4.7MMH	
R719 R720	1-202-719-00 1-202-843-51	COMPOSITION COMPOSITION		% 1/2W 1/2W		******	*******	*****
R721 R722	1-202-846-00 1-202-839-51	COMPOSITION COMPOSITION		1/2W 1/2W			SCELLANEOUS	
R726 R727	1-247-807-00 1-247-807-00	CARBON	100 5% 100 5%	1/6W		A.1-226-733-31 A.1-451-185-00		
R728	1-247-807-00		100 5%	1/6W		1-452-032-00	MAGNET, DISK; 10mm≠	
DV701	1-226-850-00	RIABLE RESIST					MAGNET, BMC	, , , , , , , , , , , , , , , , , , , ,
RV702	1-228-577-00 1-226-850-00	RES, ADJ, C	ARBON 220			<b>♦:1-509-887-0</b> 0		AND THE RESIDENCE OF THE PROPERTY OF THE PROPE
RV704	1-228-577-00 1-226-850-00	RES, ADJ, C	ARBON 220			<u> </u>	CONNECTOR, COAXIAL ANTE	NNA
RV706	1-226-114-00	RES, ADJ, M	ETAL GLAZE	2.2M		1-543-171-00 <b>6:</b> 1-556-684-00		
RV707	1-226-114-00	RES, ADJ, M	IETAL GLAZE	2.2M		<b>♦:1-555-225-00</b> <b>♦:1-555-441-00</b>		3P
						6:1-555-838-00 6:1-556-017-00	CONNECTOR ASSY (2.5MM)	6P
						1-556-054-00		

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
٠	: 1-556-408-00	CONNECTOR ASSY (LARGE) 3P	
C902 J901A J901B	1-121-705-00 1-161-491-00 1-507-539-11 1-507-539-11 1-426-086-31	CAP, ELECT (NONPOLAR) 2.2MF CAP, CERAMIC 470PF JACK, JM35A JACK, JM35A COIL, DEGAUSSING	
Q901 = Q902 R901	>8-729-341-34	COIL, DE CAUSSING TRANSISTOR 2SC1413A TRANSISTOR 2SD898B RES, CARBON 120.00 (1/2W) SWITCH, PUSH	
T901 <u>A</u> T502 <u>A</u>	.1-439-294-00	SPEAKER TRANSFORMER, OUTPUT: SOT TRANSFORMER ASSY, FLYBACK: FBT CRT (330MB22)	

### ACCESSORIES AND PACKING MATERIALS

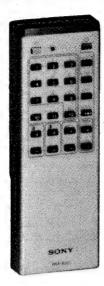
Part No.	Description	Remark
A-1470-588-A 1-504-034-72 3-701-352-00 4-316-037-00 4-362-036-00	COMMANDER ASSY (RM-620) MAGNETIC EARPHONE ME-20 BAG, POLYETHYLENE BAG, POLYETHYLENE INDIVIDUAL CARTON	
4-362-034-00 4-362-035-00 4-493-729-11	CUSHION (UPPER) (ASSY) CUSHION (LOWER) (ASSY) MANUAL, INSTRUCTION	

When indicating parts by reference number, please include the board name.

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

# RM-620

### SERVICE MANUAL



September, 1982

#### **SPECIFICATIONS**

Remote control system

Infrared control

Power requirements

3 V dc 2 IEC Designation R6 batteries (size AA)

Dimensions

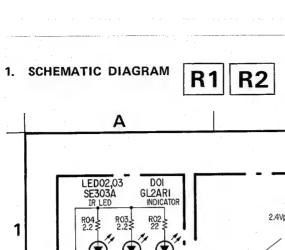
Approx.  $54 \times 18 \times 150$  mm (w/h/d)

Weight Accessory supplied Approx. 120 g including batteries IEC Designation R6 batteries (2)

Design and specifications are subject to change without notice.

REMOTE CONTROL UNIT



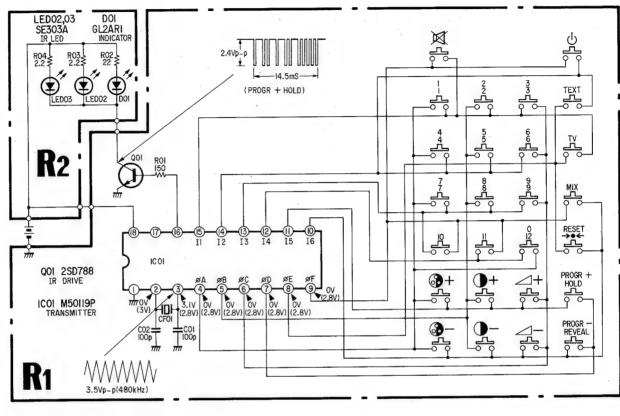


2

3

4

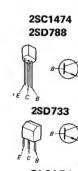
5



В

C

MODE IC PIN	10	П	12	13	14	15	17	QOIB	QOIC
Ф	3.2	3.2	3.2	3.2	2.8	, 3.2	0	0	2.6
M	3.2	3,2	3.2	3.2	3.2	2.8	0	0	2.6
1	3.2	3.2	3,2	3.2	3,2	2.8	0	0	2,6
2	3.2	3.2	3.2	3.2	3.2	2.8	0	0	2.6
3	3,2	3.2	3.2	3.2	3.2	2,8	0	0	2.6
4	3.2	3.2	3,2	3.2	2.8	3.2	0	0	2.6
5	3.2	3.2	3.2	3.2	. 2.8	3,2	0	0	2.6
6	3.2	3.2	3.2	3.2	2.8	3.2	0	0	2.6
7	3,2	3.2	3,2	2,8	3.2	3,2	0	0	2.6
8	3.2	. 3,2	3.2	2.8	3.2	3,2	0	0	2.6
9	3.2	3.2	3.2	2,8	3.2	3.2	0	0	2,6
10	3.2	3.2	3,2	2.8	3,2	. 3.2	0	0	2.6
II	3.2	3.2	2.8	3.2	3.2	3.2	0	0	2,6
12	3.2	3.2	2,8	3.2	3.2	3.2	0	0	2,6
TEXT	3,2	3,2	3.2	3.2	2.8	3.2	0	0	2.6
TV	3.2	3.2	3.2	3.2	3.2	3.2	0	0	2.6
MIX	28	3.2	3.2	3.2	3.2	3.2	0	0	2.6
RESET	2.8	3.2	3.2	3.2	3.2	3.2	0	0	2.6
<b>3</b> +	3.1	2.7	3.1	3.1	3.1	3.1	0.2	0.1	2.3
$\mathfrak{F}^-$	2.7	3.1	3.1	3.1	1.5	3.1	0.2	0.1	2.3
1+	3.1	2.7	3.1	3.1	3,1	3.1	0.2	0.1	2.3
<b>O</b> -	2.7	3,1	3.1	3.1	3.1	3.1	0.2	0.1	2.3
4	3.1	2.7	3.1	3.1	3.1	3.1	0.2	0.1	2.3
⊿-	2.7	3.1	3.1	3.1	3.1	3.1	0.2	0.1	2.3
PROGR +	3.1	2.7	3.1	3.1	3.1	3.1	0.2	0.1	2.3
PROGR -	2.7	3.1	3.1	3.1	3.1	3.1	0,2	0,1	2.3



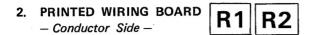
D



SE303AX







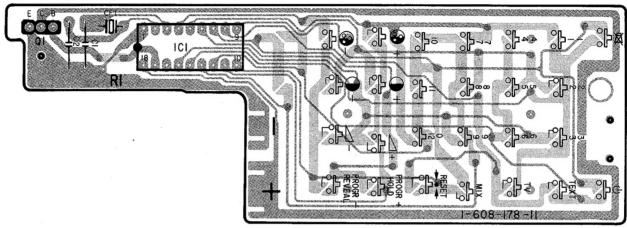
A B C D



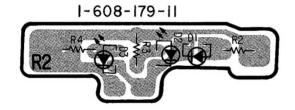
2

3

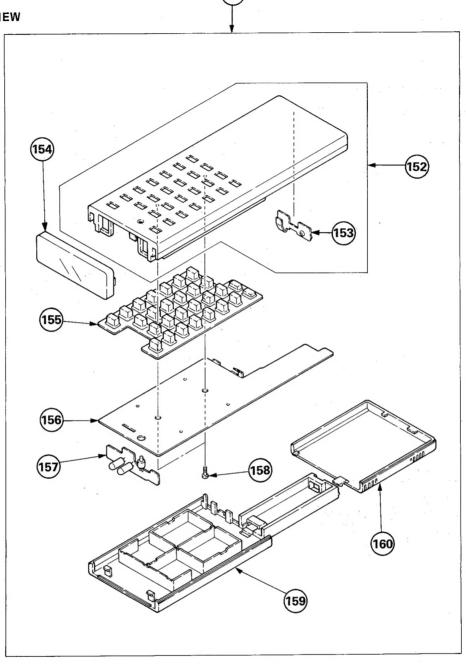
5



### R2 BOARD



#### 3. EXPLODED VIEW



No.	Part No.	Description	Remark	No.	Part No.	Description
151	A-1470-588-A	COMMANDER ASSY (SA-275)	152,153,154,155	155	4-362-022-00	SHEET, RUBBER
		•	156, 157, 158, 159	156	♦:1-608-178-00	R1 BOARD
			160	157	<b>♦:1-608-179-00</b>	R2 BOARD
152	X-4362-007-0	CASE (UPPER) ASSY, COMMA	NDER 153	158	4-356-741-00	SCREW, TAPPING (BIND 2X5)
153	4-356-344-00	TERMINAL (A), BATTERY		159	4-362-023-00	CASE (LOWER), COMMANDER
154		PANEL, FRONT, COMMANDER		160		COVER, BATTÉRY

Remark

NOTE:
• Items with no part number and no description are not stocked because they are seldom required for routine service.
• The construction parts of an assembled part are indicated with a collation number in the remark column.

### R1 R2

#### **ELECTRICAL PARTS LIST**

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Part No.

 Items marked " • " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

• MF : μF, PF : μμF

RESISTORS

· All resistors are in ohms

• F : nonflammable

COILS

• MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

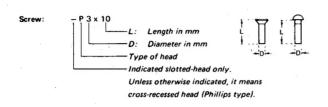
Ref.No.Part No.	Description	Remark
<b>♦:1-608-178-00</b>	R1 B0ARD *******	
<b>♦</b> :4-362-019-00 <b>♦</b> :4-362-020-00	TERMINAL (C), BATTERY TERMINAL (B), BATTERY	
CAF	ACITOR	
CO1 1-161-271-00 CO2 1-161-271-00	CERAMIC 100PF 5% CERAMIC 100PF 5%	50V 50V
FIL	TER	
CF01 1-527-476-00	OSCILLATOR, CERAMIC	
IC		
ICO1 8-759-600-07	IC M50119P	
TRA	NSISTOR	
Q01 8-729-378-84	TRANSISTOR 2SD788	
******	********	******
<b>♦:1-608-179-00</b>	R2 B0ARD *******	
DIO	DDE	
D01 8-719-900-23 LED02=>8-719-193-03 LED03=>8-719-193-03	DIODE GL2AR1 DIODE SE303AX DIODE SE303AX	
RES	SISTOR	
R02 1-247-791-00 R03 1-247-767-00 R04 1-247-767-00	CARBON 22 5% 1/6V CARBON 2.2 5% 1/6V CARBON 2.2 5% 1/6V	١ [
******	*********	*****
	S AND PACKING MATERIALS	
5		

Description

3-701-620-00 BAG, POLYETHYLENE

Remark

#### HARDWARE NOMENCLATURE



Reference Designation	Shape	Description	Remarks
		SCREWS	
P 😥		pan-head screw	binding-head (B) screw for replacement
PWH	₹3	pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP	8\$3	pan-head screw with spring washer	binding-head (B) screw and spring washer for replace- ment
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R	<b>€</b> 3	round-head screw	binding-head (B) screw for replacement
К	₽	flat-countersunk-head screw	
RK	€⊃	oval-countersunk-head screw	
В	₽	binding-head screw	
Т	<b>(</b>	truss-head screw	binding-head (B) screw for replacement
F	₽⊃	flat-fillister-head screw	
RF	€⊃	fillister-head screw	
BV	€⊃	brazier-head screw	

Nut, Washer,	Retaining ring:
	Ņ 3
	Diameter of usable screw or shaft
	Reference designation

Reference Designation Shape		Description	Remarks	
		SELF-TAPPING SCRE	ws	
TA	<b>(13)</b>	self-tapping screw	ex: TA, P3 x 10	
PTP		pan-head self-tapping screw	binding-head self- tapping (TA, B) screw for replacement	
PTPWH	screw with washer face tapping (TA, B) screw		binding-head self tapping (TA, B) screw and flat washer for replacement	
PTTWH	<b>(==0</b>	pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement	
		SET SCREWS		
sc	-	set screw		
SC	<b>⊕</b> €⊒-	hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket	
		NUT		
N	-[]-⊚-	nut		
		WASHERS		
w	0	flat washer		
sw	- →	spring washer		
LW	0	internal-tooth lock washer	ex: LW3, internal	
LW	٥	external-tooth lock washer	ex: LW3, external	
-1		RETAINING RINGS		
Ε	0	retaining ring		
G	@	grip-type retaining ring		